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EDITED BY

FRANK P. FOSTER, M.D.

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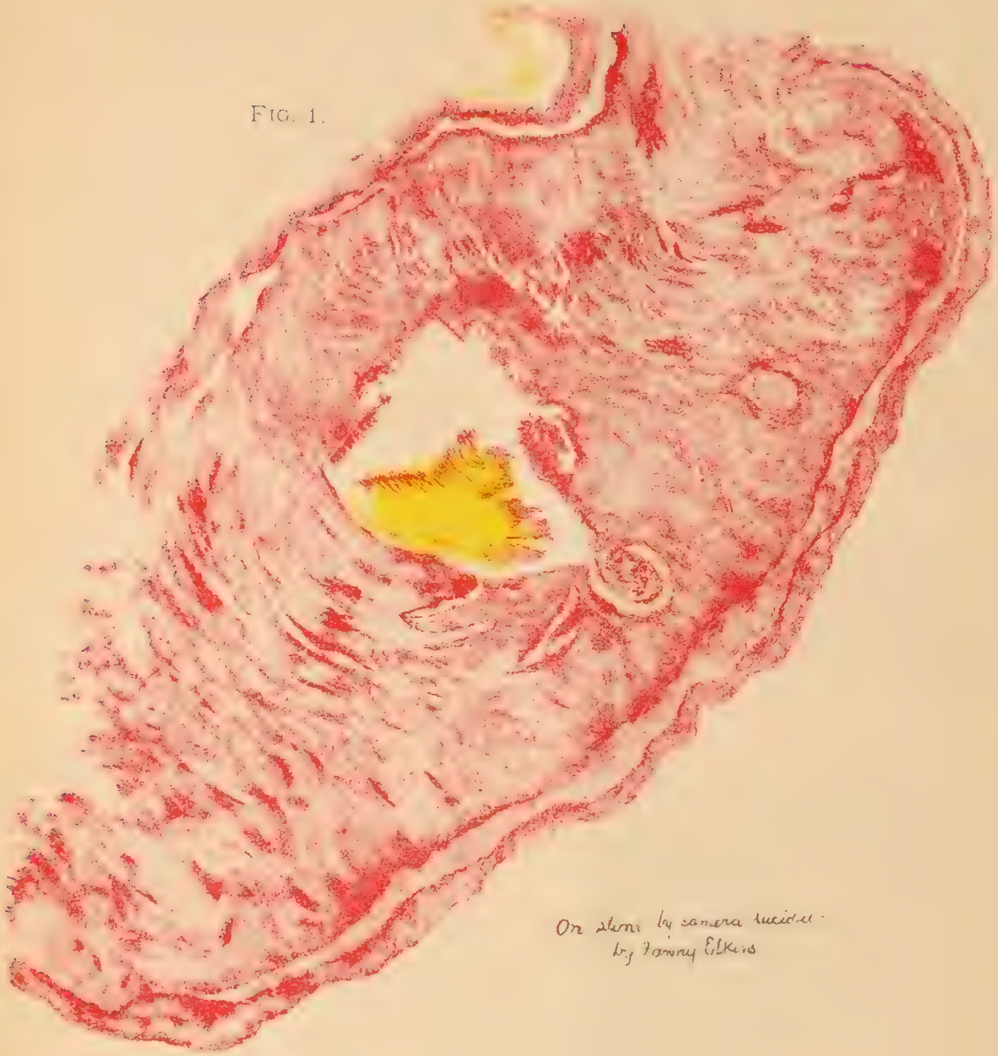
FIG. 1.



On stone by camera lucida
by Fanny Elkins

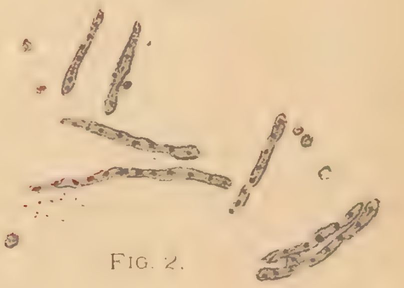


FIG. 2.

DR. JONATHAN WRIGHT'S ARTICLE ON MYCOSIS OF THE NOSE AND THROAT.

Original Communications.

A FEW REMARKS ON SOME CASES OF MYCOSIS OF THE NOSE AND THROAT.*

By JONATHAN WRIGHT, M. D.

The mycotic growths to which this paper especially refers are of that form known as *Leptothrix buccalis.* Dr. Toeplitz, Dr. Gruening, Dr. F. I. Knight, Dr. Hemenway, Dr. Vander Poel, Dr. Newcomb, and others in America, and many abroad, have almost exhausted this topic. In Dr. Hemenway's excellent article in the *Journal of Laryngology*, February, 1892, there is a full bibliography. My only wish, in these few notes, is to draw your attention to some points which have interested me in a few cases I have lately seen.

Klebs † says in regard to the *Leptothrix buccalis:* "We must classify them with the lime-building algæ, and seek their nearest related forms outside of the human body among the lime algæ which occur in sweet and salt water, and possess special importance for certain geological formations."

The *Leptothrix buccalis* itself has not, so far as I know, been cultivated outside of the body, not even in water to which lime has been added. It is always found in the secretions which gather around healthy but uncared-for teeth. It is found in rhinoliths, tonsillar concretions, and stones in the bladder, and is supposed by many to be the cause of dental caries, since it is invariably present in the cavities of carious teeth, but, as Klebs remarks, it can hardly be considered the primal cause. Since it is an organism which precipitates lime salts from fluids holding them in solution, it probably finds in carious cavities a suitable soil for its growth. It has been observed in gangrenous pulmonary cavities. It is very frequently met with in tonsillar crypts, even when there is no indication of the condition which we know clinically as mycosis pharyngis or tonsillaris. I have recently found it microscopically in the depressions between the protuberances of nasopharyngeal lymphoid hypertrophy. It has been seen in the acini of the glands of the mucous membrane, though I myself have never noticed it there in microscopic sections. From these considerations, then, we may reason that some conditions following chronic inflammation favor the growth of the fungus. It may have some connection with the desquamation of epithelial cells, the exudation of round cells or of nuclei, or the growth of certain other forms of micro-organisms, since we find all these mingled with the mycelial mass in the tonsillar crypts, and in the depths of acinous glands. This, however, it must be remembered, is pure conjecture. Digestive disturbances have been noticed in many cases, and have been supposed to have something to do with the growth; but I have seen many cases without any appreciable indigestion. It is probable, however, that the latter is an ætiological link which connects dental caries and the leptothrix. It is probable also that atmospheric influences have a good deal to do with the growth, as a change of air and locality seems really to be the only efficacious remedy we can resort to.

Mycosis pharyngis is apparently a fairly common affection. By this term, of course, we mean the overgrowth of a fungus in the minute depressions of the mucous membrane to such a degree as to appear on the surface in the form of white spots of varying extent. For the first few years of my work in the nose and throat I saw very few cases, but latterly, since I have been more familiar with the disease, I see perhaps six or seven cases a year. I presume I overlooked them at first, for they do not always present a very striking appearance, and frequently give rise to no symptoms.

The following four cases are selected from a number I have seen in the last year or two:

Case I was that of a healthy-looking young girl who came to my office several months ago for some postnasal dropping and some vaso-motor nasal obstruction. Her mother had noticed white spots in her throat since last fall, but they had apparently given her no inconvenience. There were a few white plugs in the mouths of the tonsillar crypts which could not be wiped out. On the posterior pharyngeal wall and extending well up into the postnasal space were innumerable little, hardly visible, waving, white, hairlike threads, apparently several millimetres long. They seemed to spring from the mouths of the pharyngeal glands. Microscopical examination revealed the *Leptothrix buccalis.* As she had once had a severe attack of diphtheria her mother was a little uneasy at their presence, which she had discovered in the tonsils, not having observed, of course, the fine pharyngeal growth.

I told them I could not do much for the white spots, and as they gave rise to no symptoms, I advised her to defer treatment for them until they did give her trouble. I had her use a nasal douche for her catarrhal trouble, and, very much to my surprise, in two weeks every vestige of the mycotic growth had disappeared. One or two of the larger plugs in the tonsils were touched several times with a solution of iodine, but no treatment beyond the alkaline douche was directed to the other growths.

I have used without success all sorts of treatment in the fifteen or twenty other cases I have seen. Cauterization in my hands has been of no avail except on the tonsils; on the pharynx, the base of the tongue, and the faucial pillars it is always painful. Such cases, we must believe, finally end in recovery of themselves, and I mention this one case as an illustration of the fallacy of alleging a cure from the many kinds of local applications that have been urged for the trouble. If the doctor's faith and the victim's purse and patience hold out, he will probably recover under treatment, but not on account of it. It is unreasonable to think that any surface application can be effectually made to the bottom of acinous glands. As long as the soil is suitable the fungus will grow, however much you may burn off or paint the tops of its projecting sprouts.

Cases II and III, also in private patients, occurred in two sisters, fourteen and fifteen years of age. They were healthy persons with their previous history identical. One had been subject to slight but pretty constant sore throat for two years, and the other for three years. Both had had measles six years before. Both had slightly enlarged tonsils, with some lymphoid hypertrophy in the postnasal space. Both had some mycotic growth on the tonsils, but more on the posterior pharyngeal wall. I cut off all I could of the tonsillar tissue in both cases, and I am able to show you a section of one of them stained with lithio-carmin. A few crystals of picric acid were added to the alcohol just before the sections were put into the clarifying oil, and it will be seen in Fig. 1 what a brilliant yellow stain the leptothrix threads have taken. The principal mass of them will be seen to lie in a crypt which has been cut transversely, while in a small depression on the surface there is a smaller mass. The growth does not penetrate the epithelial layer at all, but lies in immediate contact with it. This is under a very low magnifying power. With a high power desquamated epithelial and round cells can be seen among the mycelial threads, and at the ends, in the illustration, the carmin stain has tinged them.

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* Read before the New York Academy of Medicine, April 24, 1895.

† *Allgemeine Pathologie*, vol. i, p. 274.

Fig. 2 represents some of the mycelial threads (under one-twelfth homogeneous immersion objective) which are shorter and have taken a deeper stain than others. These sections were stained with gentian violet and decolorized by Gram's method. It will be seen that these rods show, both within their calibre and around them, unmistakable spores. Nothing can be seen with any power or stain of any variation in the calibre of the leptothrix threads or of any joints in them.

I desire especially to draw attention to the brilliant stain these growths take with picric acid, which by its intensity distinguishes them sharply from the usual elements of the tonsil. It seems a very simple method of demonstrating them in sections.

Of course, in these two cases of sisters we can not suppose there was any contagion from one to the other, since we know that practically the growth exists in all mouths, but a similar environment and a similar individual tendency probably combined to prepare a favorable soil for the development of the clinical condition in both sisters. I had these two patients come to my office yesterday for inspection. They had not returned since the amygdalotomy because, they declared, all their symptoms had been relieved. They still had a few points of mycotic growth on the posterior pharyngeal wall, but very much less than before, and none in the tonsillar region.

Mycosis of the Nose.—Case IV I recently saw at the Woman's Medical College. A middle-aged woman had some mycotic-looking white patches on the roof of the nasopharynx; but what especially attracted my attention were one or two pearly-white minute spots on the mucous membrane covering the anterior end of the inferior turbinated bone on each side. They could not be brushed away with cotton. Examination under the microscope showed them to consist partly of mycelial threads. The character of the growth in the nasopharynx was not ascertained. I have not thus far noticed the reports in literature of any growths occurring in the nose.

It becomes apparent, from these and other cases reported, that mycosis may be observed clinically and microscopically in any situation in the air tract where the unknown condition is favorable to their growth. In closing, I may add my own testimony to that of all others who have written extensively on the subject—viz., that the disease seems to be almost confined to women. I have never seen more than one or two cases in men.

OBSERVATIONS ON
EXCESSIVE INTESTINAL PUTREFACTION.

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(*Continued from vol. lxi, page 813.*)

Excessive Intestinal Putrefaction in Epilepsy.—In a preliminary paper, to which reference has already been made, reports were presented as to the condition of intestinal putrefaction in thirty-three epileptics, and it was pointed out that some degree of excess of the products of such putrefaction was found in the urine in the majority of these cases. Since the publication of this paper a number of further observations have been made, partly upon the cases previously reported and partly upon new ones. These observations confirm the accuracy of the conclusions already reached. As might have been predicted, the more extended study of the general theme which forms the subject of the present article has served to emphasize certain facts regarding the earlier work, especially the fact that the excessive intestinal putrefaction is a condition of wide distribution, and in no wise distinctive of or peculiar to epilepsy. It seems almost unnecessary to point out this fact here, but it appears that the report already mentioned has given some the impression that a claim was made that excessive intestinal putrefaction is distinctive of epilepsy. Although it is owned that the broad distribution of this condition was less fully appreciated formerly than now, it was fully understood that the condition was not in any way peculiar to epileptics,* though in them it seems frequently to determine seizures.

The results in the following cases of epilepsy, which have been studied during the past years in regard to the subject under consideration, may be very briefly presented.

A. M., aged twenty-six years; weight, one hundred and sixty pounds; has had several seizures of typical *petit mal* daily for more than ten years. Examination showed that there was no deviation from the normal as regards putrefactive processes in the intestine, although the seizures were recurring with the normal frequency at the time. The uric acid, however, is somewhat in excess. The figures are as follows:

Urea	26·676	grammes.
Uric acid	0·658	gramme.
Preformed sulphates	1·864	"
Combined sulphates	0·173	"
Ratio	10·7	

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* There is no formal statement of this fact in the text, but the occurrence of excessive intestinal putrefaction in Bright's and jaundice is mentioned in one of the footnotes. *Loc. cit.*

This case falls in line with the cases of *petit mal* previously reported in being negative as regards putrefactive excess and in showing a high uric acid, which is doubtless to be attributed to some disorder of nutrition.

The next case was in the practice of Dr. Frederick Peterson, to whom I am indebted for the history.

L. L., male, aged twenty-four years, has had idiopathic nocturnal *grand mal* seizures every few months for about five years and *petit mal* seizures several times weekly. On dietetic treatment, with strontium bromide. Examination showed a high grade of intestinal putrefaction. The figures are as follows:

DATE.	Preformed sulphate, gramme.	Combined sulphate, gramme.	Ratio.	Urea, grammes.	Indican.
Oct. 2, 1892 ...	1·502	0·248	6·0	18·397	Strong.
Oct. 8th.......	1·438	0·207	6·9	17·126	"
Oct. 29th......	1·205	0·336	3·6	17·715	Medium (violet).
Nov. 2d.......	1·753	0·179	9·8	19·668	Medium.

There was slight improvement on hydronaphthol in this case. General condition improved, but no permanent effect on seizures.

In another case of epilepsy with frequent atypical *grand* and *petit mal* seizures, in a corpulent boy aged twelve years, in which there was a suspicion that the trouble was of traumatic origin, but in which trephining did no good, a study of the urine showed the existence of excessive intestinal putrefaction. On a restricted diet there was a reduction in the putrefactive products, but no diminution in the frequency or change in the character of the seizures.

I am indebted to Dr. Starr for the opportunity to study the case. The results were as follows:

DATE.	Preformed sulphate, grammes.	Combined sulphate, gramme.	Ratio.	Urea, grammes.	Indican.
Oct. 11, 1892...	2·909	0·340	8·5	34·011	Very strong.
Oct. 12th......	2·914	0·231	12·6	30·163	" "
Oct. 13th......	2·516	0·227	11·0	27·310	" "
Nov. 10th	3·457	0·263	13·1	32·783	Very weak.
Nov. 11th	1·301	0·126	10·3	15·122	Negative.
Nov. 23d......	3·230	0·245	13·2	......	Very strong.

After treatment by intestinal antiseptics and diet had been given up as useless, considerable improvement occurred with the bromide treatment.

In the following case, which occurred in the practice of Dr. Starr, and is probably one of epilepsy, the results of a single examination made a few days after the last seizure were entirely negative as regards evidences of excessive intestinal putrefaction. The patient, a man thirty years of age, gave a history of having had in the course of three months three seizures characterized by nausea, vomiting, and subsequent loss of consciousness, in which he "thrashed about." These are the figures:

Urea	25·962 grammes.
Uric acid.......................	0·606 gramme.
Preformed sulphates...............	2·170 grammes.
Combined sulphates................	0·130 gramme.
Indigo blue......................	Negative.

The three following cases occurred in Dr. Northrup's service in the Presbyterian Hospital. Very careful histories of the cases were furnished me by Dr. D. Van B. Hedges, the house physician.

The first case is that of a little boy, aged four years, who for a year prior to admission had been subject to general epileptiform seizures which, during the month preceding admission, had recurred as frequently as three or four times daily. Soon after admission he was put on a carefully regulated diet, from which vegetable nitrogenous food was excluded, and took five grammes of resorcin three times daily. On the fourth day after admission the convulsions ceased. He remained in the hospital under observation for two months, but had no return of the seizures. Unfortunately, no examination was made of the urine until the patient was put upon treatment. It then contained a small amount of indigo blue. It is likely, though by no means certain, that an examination made before treatment was begun would have given more decided evidences of excessive intestinal putrefaction. The case is recorded here because of the very striking improvement that occurred when treatment was commenced. The most careful examination failed to show any evidence of former organic cerebral disease. There had been no restrictions in the diet of the child before he came under observation.

The next case illustrates the failure of the treatment which, in the preceding patient, seemed so efficacious.

A boy, aged sixteen years, with the habit of masturbation, had been having frequent typical *grand mal* epileptic seizures, two or three a week, for two years before admission to the hospital. The seizures begin regularly with a sense of numbness in the left hand, followed by local spasm, first of the finger, then of the entire left side, and finally become general. For three days after admission had a convulsion at about 6 A. M. On resorcin, five grains three times a day, there were no seizures for ten days, and the patient left the hospital apparently improved. But the seizures soon returned and he was readmitted. For three weeks following readmission there was a seizure each morning about six o'clock, notwithstanding an attempt to diminish intestinal putrefaction by the use of large doses of resorcin, careful diet, and the free use of bromides.

In this case apparent improvement followed upon the use of strychnine and antipyrine.

Studies of the urine give the following results:

DATE.	Preformed sulphates, gramme.	Combined sulphates, gramme.	Ratio.	Urea, grammes.	Indican.
April 10, 1893..	0·725	0·316	2·3	12·959	Negative.
April 11th.....	0·548	0·312	1·7	15·899	Medium.

T. M., aged twenty-six years, was admitted in a state of unconsciousness, having been picked up in an epileptiform seizure. After admission had fifteen general epileptic convulsions in the course of seven or eight hours. Was delirious in the intervals. Temperature rose to 104° F. The following day the temperature fell to normal, and there were only three seizures. On coming out of the last one the patient was very noisy. Three days later there were two slight seizures, and during the ten days following none.

The interesting feature of this case is, that at the time the patient was having such numerous seizures the urine gave an intense indigo-blue reaction, which grew less and disappeared when the seizures ceased. A slight amount of indigo blue was present when the seizures returned, but during the remainder of the patient's stay in the hospital none could be detected.

We are not able to make any decisive statement regarding the symptoms of intestinal indigestion in epilepsy in cases where putrefactive products are present in excess, since in most cases the digestive symptoms were not inquired into with care.

In many cases, however, especially those in which indican has been present in excess, there have been symptoms pointing to intestinal indigestion, and there is every reason to suppose that the symptoms of indigestion occur under the same conditions as when epilepsy is not a feature of the clinical history.

Excessive Intestinal Putrefaction in Melancholia.—In July, 1892, Dr. John Macpherson * called attention to the results obtained by him in the treatment of some forms of acute insanity by means of intestinal antiseptics. He pointed out the fact that the acid of the gastric juice has important antiseptic properties, and that where this secretion is perverted, as in acute mental disease, we have an indication for the use of intestinal antiseptics.

The mode of procedure recommended is as follows: Selecting a suitable case, the stomach is first washed out; a dose of calomel (two and a half to four grains) is then given at night, followed by a mild cathartic in the morning. This is followed by the use of mild laxatives daily. On the second day, naphthalene, in ten-grain doses, three times daily, is given between meals. The dose is gradually increased until eighty grains have been administered in the twenty-four hours. No harmful effects were noted from these doses. The quantity of nitrogenous food taken during the treatment was much decreased. Macpherson treated thirty acute cases of mental disease in this manner. He observed that the bodily weight steadily increased. The tendency of the skin to pigmentation in melancholia was checked and the skin lost its dry appearance.

The action of the drug in promoting sleep is said to have been pronounced. Macpherson considers naphthalene of especial value in acute melancholia. He states that the naphthalene reduced the sulphates in the urine (a vague statement, as reported), and that the fæces of patients using it were devoid of smell—evidences of the antiseptic power of the drug.

Through the interest of Dr. Atwood and Dr. Dold, of Bloomingdale Asylum, we have had an opportunity of studying the condition of intestinal putrefaction in eight typical cases of acute melancholia. It will be noticed that the most striking thing about the results in these cases is the fact that the ratio of the sulphates is lower than in health, and not merely lower, but very much lower, the ratios being among the lowest ever observed in disease. At first sight it might be supposed that we had to deal here with an unequivocal example of excessive intestinal putrefaction. On reflection, however, it appears that any conclusion based merely on this low ratio (which we may assume for the moment to be a characteristic of melancholia, though the number of cases is not great) fails to take account of certain unusual features present in these cases, which suggest that this ratio should be differently interpreted. It is noticeable first that the preformed sulphates are present in very small amount, and that this circumstance gives us a low ratio notwithstanding an unusually small amount of combined sulphates—an amount which may be less than is usually observed in health. Further, it is evident that the quantity of urea excreted is in some instances low. Now, both the low urea and the low preformed sulphates indicate inactivity in nitrogenous metabolism. This is accounted for probably by the small quantity of food taken in these cases. In fact, as is well known, cases of melancholia are often in a condition of partial starvation.

The quantity of food taken in Case I was considerable, but in the other cases was small. We know from recent observations of Müller * that in persons who starve the ratio of sulphates may become very low, probably in part because of the practical arrest of the intestinal contents and their failure to pass through the intestine. May not this be the explanation of the low ratio of sulphates observed in melancholia, at least in some cases? This interpretation is certainly one that should be borne in mind in considering the origin of excessive intestinal putrefaction in such cases.

The following are the results which have been obtained:

Case I. *Acute Melancholia.*

Date.	Preformed sulphates, grammes.	Combined sulphates, gramme.	Ratio.	Urea, grammes.	Indigo blue.
1892..........	0·845	0·251	3·4	13·638	
April 28th.....	0·753	0·206	3·6	11·806	Negative.
May 4, 1893...	1·014	0·311	3·3	16·684	Traces only.
May 21st......	1·117	0·131	8·5	13·325	Negative.
May 25th......	1·102	0·215	5·1	14·765	“
May 27th......	0·730	0·119	6·1	9·771	“
May 31st......	3·051	0·242	12·6	18·096	Traces.
June 3d.......	1·213	0·259	4·6	16·827	“
June 7th......	1·378	0·424	3·2	20·937	“
June 10th.....	1·036	0·312	3·3	15·929	Negative.

Here the ratios are much too low, and the combined sulphates in some instances above the normal.

Case II. *Melancholia.*

Date.	Preformed sulphates, gramme.	Combined sulphates, gramme.	Ratio.	Urea, grammes.	Indigo blue.
May 2, 1893...	1·176	0·206	5·7	16·257	Negative.
May 27th......	1·740	0·201	8·6	20·805	“

Ratios too low, combined sulphates within the normal.

Case III. *Melancholia.*

Date.	Preformed sulphates, gramme.	Combined sulphates, gramme.	Ratio.	Urea, grammes.	Indigo blue.
May 3, 1892...	1·238	0 272	4·5	18·461	Traces.
May 27th......	0·695	0·228	3·0	14·083	Negative.

Ratios too low.

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* Abstract in one of the December, 1892, numbers of the *New York Medical Journal.*

* Untersuchungen an zwei hungernden Menschen. *Arch. für pathologische Anatomie und Physiologie und für klin. Med.*, Band cxxxi, Supplementheft, 1893.

Case IV. *Melancholia.*

Date.	Preformed sulphates, grammes.	Combined sulphates, gramme.	Ratio.	Urea, grammes.	Indigo blue.
May 3, 1893 . . .	2·622	0·268	9·7	32·344	Strong.
May 27th.	2·430	0·181	13·4	26·721	"

Ratios normal.

Case V. (*Dr. Dold's Patient.*) *Acute Melancholia (with Frenzy).*—Mrs. A. L., aged forty-two years. Mental disorder followed her witnessing the suicide of her husband. Suffers from great mental depression and makes frequent attempts at suicide. At one time was in a condition of frenzy. Patient is robust and general health is excellent.

Date.	Preformed sulphates, gramme.	Combined sulphates, gramme.	Ratio.	Urea, grammes.	Indigo blue.	
Nov. 27, 1893.	1·223	0·050	24·4	13 911	Negative.	Partial sample.
Nov. 28th. . . .	0·776	0·133	5·8	11·658	Very strong purple.	
Nov. 29th. . . .	1·098	0·158	6·9	12·074	Strong purple.	
Nov. 30th. . . .	0·883	0·168	5·1	13·845	" "	
Dec. 1st.	1·052	0·177	6·2	20·064	" "	
Dec. 2d.	0·902	0·168	6·6	11·416	Medium.	Sediment of urates.
Dec. 3d.	1·042	0·136	5·7	12·810	Strong purple.	
Dec. 4th	0·851	0·082	6·4	12·020	" "	Do.
Dec 5th.	0·691	0·097	7·1	7·525	" "	
Dec. 6th.	0·873	0·135	6·2	9·714	" "	Do.
Dec. 7th.	0·690	0·070	9·8	9·204	" "	
Dec. 8th. . . .	0·696	0·194	7·4	7·779	" "	
Dec. 9th.	1·129	0·144	7·8	14·819	Medium purple.	
Dec. 10th. . . .	0·638	0·104	6·1	7·949	" "	
Dec. 11th. . . .	1·164	0·166	7·0	15·402	Strong purple.	
Dec. 12th. . . .	1·154	0·131	8·8	9·876	Weak purple.	
Dec. 13th. . . .	0·651	0·097	6·7	8·516	" "	

Case VI. (*Dr. Dold's Patient.*) *Acute Melancholia (Recurrent).*—Mrs. D., aged forty-seven years. Two previous attacks from which there was apparently perfect recovery. Present attack began with the delusion that she was the most wicked woman living, and that she had caused all the water to dry up so that people were perishing by millions. Recovery very gradual; sleep bad; general nutrition poor.

Date.	Preformed sulphates, gramme.	Combined sulphates, gramme.	Ratio.	Urea, grammes.	Indigo blue.	
Dec. 16, 1893.	0·785	0·200	3·9	10·194	Weak.	
Dec. 17th. . . .	0·374	0·167	2·1	7·980	"	
Dec. 18th. . . .	0·520	0·169	4·8	. . . . . .	"	
Dec. 19th. . . .	. . . . . .	. . . . . .	. . .	2·340	"	Partial sample.
Dec. 20th. . . .	0·358	0·090	4·0	5·361	"	" "

Case VII. (*Dr. Dold's Patient.*) *Acute Melancholia.*—Mrs. C. A. L., aged sixty-six years. Present attack followed financial troubles and the death of her husband. Has had the delusion that she has stolen millions and will be thrown into prison. Talks of suicide, thinks she is watched, and says she is very wicked. Eats and sleeps poorly.

Date.	Preformed sulphates, grammes.	Combined sulphates, gramme.	Ratio.	Urea, grammes.	Indigo blue.	
Nov. 14, 1893..	2·231	0·184	12·1	22·624	Very strong.	
Nov. 15th.	1·432	0·117	12·2	14·116	Traces.	
Nov. 16th, 17th	1·817	0·244	7·4	21·803	Negative.	
Nov. 17th, 18th	2·073	0·208	10·0	20·862	Weak.	
Nov. 18th, 19th	1·120	0·131	8·5	13·704	Negative.	
Nov. 19th, 20th	1·199	0·192	6·2	12·723	"	
Nov. 20th, 21st	1·772	0·204	8·7	17·862	"	Urine alkaline.
Nov. 21st, 22d.	1·670	0·183	9·0	15·343	"	Do.
Nov. 22d, 23d.	1·429	0·140	10·2	13·121	"	Do.
Nov. 23d, 24th.	1·353	0·174	7·8	14·389	"	Do.
Nov. 24th, 25th	1·740	0·140	12·4	14·598	"	Do.

In two cases of acute mania the results were normal.

Case IX. *Acute Mania.*

Date.	Preformed sulphates, grammes.	Combined sulphates, gramme.	Ratio.	Urea, grammes.	Indigo blue.
May 4, 1893 . . .	1·567	0·164	9·5	20·518	Negative.
May 19th.	1·554	0·184	8·4	21·226	Medium violet red.
May 21st.	2·133	0·081	26·3	21·507	Negative.
May 25th.	1·522	0·161	9·4	19·833	"
May 27th.	2·357	0·185	12·7	27·286	"
June 7th.	1·669	0·192	8·7	22·041	"

Ratios normal, combined and preformed sulphates normal.

Case X. *Acute Mania.*

Date.	Preformed sulphates, grammes.	Combined sulphates, gramme.	Ratio.	Urea, grammes.	Indigo blue.
June 3, 1893. . .	1·707	0·190	9·0	24·591	Negative.
June 10th	2·226	0·216	10·3	28·506	Weak pink.

Ratios and sulphates normal.

(*To be continued.*)

FIBRINO-PLASTIC EXUDATES.

WITH REPORTS OF TWO CASES OF

LAMINATED FIBRINO-PLASTIC RHINITIS,

INCLUDING LABORATORY INVESTIGATION.*

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This rare variety of inflammation, which as a rule involves the upper air-passages, although it may involve any mucous-membrane tract, is one in which there has been and still is a vast difference of opinion as to ætiology and pathology, although modern research from a bacteriological standpoint would seem to settle the question.

This difference of opinion is largely due, then, not so much to the uncertainty of the ætiological factor, but to the degree of pathogenesis of that factor. That such a condition as membranous exudates does exist all writers agree. To the condition many names have been applied by different writers, each using that which he thought best described the condition as observed by him.

When occurring in the nasal passages, it has been referred to as croupous, membranous, fibrinous, primary pseudo-membranous, plastic, and fibrino-plastic rhinitis, and nasal diphtheria.

While this paper is based on two cases of laminated fibrino-plastic rhinitis, yet the theories in regard to the alterations produced in the nares will hold good in any of the mucous membranes of the upper air-passages—in fact, of any mucous membrane.

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* Read before the Section in Laryngology and Otology of the American Medical Association, Baltimore, May 9, 1895.

Although the subject is one which during the last few years has claimed the attention of the clinician and bacteriologist, yet the literature bearing upon the subject, although considerable, is not exhaustive, and while the consensus of opinion of authors and investigators seem to be that membranous inflammations are of bacteric origin, yet there are many who believe that we do have false membranes of a diphtheritic character, yet not true diphtheria—their statements being based more upon clinical than bacteriological observations.

From an ætiological and pathological standpoint, the membranous inflammations can be divided into two varieties, as (1) specific, those due to a specific bacteria, as diphtheria; and (2) non-specific, or those not due to a special micro-organism—the fibrino-plastic variety being placed under the latter.

That germs do cause membranous inflammation we do not question. The Klebs-Loeffler bacillus of diphtheria, von Hofmann's bacillus, and the streptococcus, either alone or associated, being the common ones. That we may have a membranous exudate without germs is proved by the membranes which suddenly form after inhalation of irritating fumes and after cauterization.

In membranous inflammations due to specific bacterial causes there is no tendency to organization, while in those not of bacterial origin capillary budding may take place on the surface of the desquamating mucous membrane.

Every variety of inflammation necessarily begins in the vascular layer, the degree of alteration in this layer determining the alterations in the basement membrane and epithelial layers, these layers being dependent upon the submucosa for their nutrition; if, then, the blood supply be cut off, the epithelial layer or the layer farthest from nutrition will undergo necrosis. If there is then poured out on the surface of the mucous membrane this plastic exudate without the presence of a specific germ and with only the desquamation of epithelial cells which occurs in a catarrhal inflammation, capillary budding with at least partial organization is possible. But with bacterial causes the inflammation is of a severer type, nutrition being almost or entirely cut off in localized areas, rendering organization impossible, and terminating in coagulative necrosis or ulceration.

This conforms to the views of such eminent pathologists as Virchow, Weigert, and Cohnheim. With the discovery of the bacillus of diphtheria by Klebs and Loeffler, it apparently settled the dispute over the relation between diphtheria and allied conditions. Yet when we have to deal with membranous inflammations, usually of the nasal mucous membranes, which run a mild clinical course, in which exudate no distinctive germs are found, when there is no history of direct infection and no spreading of the disease, we necessarily question the fact that all these varieties of exudates are due to special bacteria, be it only in an attenuated form. The effect of nutrition and surroundings, light, etc., on the virulence of germs is well established. If, then, there should be present a bacillus resembling the bacillus of diphtheria, yet possessing none of its virulence, and giving no reaction in inoculated animals, are we warranted in stating that germ to be the ætiological factor? Yet, as correctly stated by Abbott, "It is not always possible to establish a dependence between the clinical course of the disease and the degree of virulence possessed by the organism causing it."

The studies of Booker show clearly that the local changes seen in the throats of patients suffering from measles and scarlet fever are anatomically distinct from those seen in diphtheria.

Sajous, in a *résumé* in the *Annual of the Universal Medical Sciences*, for 1894, says: The papers upon the subject of fibrinous rhinitis published during the year have contributed but little to the elucidation of this still obscure disease.

Eulenstein, basing himself upon the fact that fibrinous exudates of different bacteriological nature may be found in other regions of the respiratory tracts, considers that we are not authorized to grant the disease an identity of its own. In contradistinction to this, McBride admits the disease to be distinct from diphtheria. Moldenhanner was among the first to describe the disease.

Abbott, of Philadelphia, in his well-known research (*Annual of the Univ. Med. Sci.*, 1894) found that cultivations from the nasal membrane of one little patient showing the symptoms of fibrinous rhinitis revealed Klebs-Loeffler bacillus in large numbers and of normal virulence; inoculations upon guinea-pigs caused death within forty-eight hours, with pathological lesions characteristic of these inoculations; but from a sister of the same patient, affected with the same disease, cultivations proved on inoculation, to be devoid of pathogenic properties. The same thing occurred in Park's six cases, the bacilli cultivated possessing only a low degree of virulence. Abbott suggests that the bacillus varies in intensity, sometimes presenting a complete absence of the Klebs-Loeffler bacillus, and in some cases the difficulty of finding it must be taken into account. Gorn, of Brussels, found it after making four careful examinations.

Stark, of Kiel, could not find the Klebs-Loeffler bacillus in three cases observed by him. Abel found the diphtheria bacillus in the membrane of some cases, and Fraenkel's pneumococcus in that of others. Birket found the Klebs-Loeffler bacillus in two cases; notwithstanding these conflicting results, the fact remains that in many cases the diphtheria bacillus can undoubtedly be isolated.

Seudziak, of Warren, reports a case of fibrinous rhinitis which followed toxæmia resulting from a wound of the chin during the act of shaving. The staphylococci were the only micro-organisms found; the same observer, basing his opinion upon a case seen in the hands of a colleague and upon an exhaustive study of the literature of the subject, considers that fibrinous rhinitis is an independent pathological process having nothing in common with diphtheria. He was unable to obtain the Klebs-Loeffler bacillus in the membrane or in preparations on glass or in sections colored by the usual Loeffler method, but by a special method of Weigert found fibrin, lymphoid cells, and a few cocci. On agar-agar, at a temperature of 37° C. (89·6° F.), the culture obtained resembled the *Streptococcus pyo-*

genes. Under the microscope were seen (under immersion and colored by gentian violet) different cocci. Some of the membrane from the patient was inoculated into the back of a rabbit, producing only a slight rise in temperature. In support of the view that the case was one of fibrinous rhinitis, there is the clinical picture of the disease: slight and fleeting general disturbance, absence of adenitis, typical membranes, want of collateral symptoms.

Scherch (*Mundhöhle des Rachens und der Nase*, 1890, page 268) speaks of rhinitis crouposa fibrinosa and says: The genuine rhinitis crouposa fibrinosa is one of the affections least often encountered. Hartman, Howard, and other observers have seen it occurring sporadically after measles or amygdalitis, and sometimes after operations for adenoid growths.

Hartman, of Berlin (*Deutsch. med. Wochenschrift*, 1887, No. 29, S. 641), has reported six cases.

Concetti (*Archivio ital. di laringologia*, 1892, anno xii, reference from *Ctrlbl. für Bakteriologie und Parasitenkunde*, 1892, Bd. xii, pp. 17, reference from Abbott's article), in five cases of pseudo-membranous rhinitis, obtained from two of them by culture methods the virulent diphtheritic bacillus; in two others, a history of direct infection from one to the other, with, in the latter cases, subsequent diphtheritic paralysis, while in the fifth case there was a secondary appearance of a membranous condition in the larynx.

Seiler, of Philadelphia, refers to several cases met with in his practice; two of these subsequently had paralysis of the soft palate.

Bosworth speaks of croupous rhinitis and defines it as "an acute inflammation of the mucous membrane lining the nasal passages. It occurs both in children and adults, although in children it runs a somewhat more protracted course, and its symptoms show a more aggravated character."

Newcomb (Sajous's *Annual of the Univ. Med. Sci.*, 1892, sec. D, 3) reports two cases of membranous rhinitis. Microscopical examination of a portion of the membrane showed only the ordinary fibrinous structure entangling a few epithelial and pus cells, with here and there scanty rod and spherical bacteria.

Hall states that the exudation resembles in many respects that seen in diphtheria. It is of a white color, more or less firmly adherent to the subjacent mucous membrane, and when removed a bleeding surface is left. Occasionally, however, the membrane is loosely attached, and can consequently be removed without causing bleeding. The exudation is limited to the nasal mucous membrane, and the pharynx does not show any signs of disturbance.

Hunter reports a case in which the exudation occurred on the tonsils.

Watson Williams says: Fibrinous or croupous rhinitis is attended with the formation of a tough membrane on the nasal mucosa. It is probably due to the action of some form of micrococcus, and the membrane is analogous to the so-called diphtheria membrane of scarlet fever. The attack may be ushered in with chilliness and rise of temperature, or there may not be any general symptoms at all, as in one case which he observed; after removing the membrane there is usually a discharge of mucus from the nose.

Staum reports four cases, all of which showed present the bacillus of diphtheria, and Baginsky reports two cases.

Seifert (*Münchener med. Wochenschrift*, 1887, No. 38), G. R. Ryerson, Gluck, Bresgen, and Potter have reported cases of this disease.

Chambellar (*Journal de clinique et de thérap.*, Paris, 1894) speaks of fibrinous rhinitis.

Kezetes (*Budapest. med.-chir. Presse*, Budapest, 1893, xxx, 36) speaks of rhinitis fibrinosa.

Fibrinous rhinitis is generally considered to be a disease essentially of early life; of twenty-six cases collected by Raulin, three occurred during adolescence and three in adults, the remaining twenty in infancy and childhood. The disease usually appears without any exciting cause being discoverable.

Potter estimates that fibrinous rhinitis occurs in about two per cent. of all cases of rhinitis. The symptoms are those of ordinary coryza—temperature not high, pulse slightly quickened.

McBride saw but one case; he noticed that the most marked and distressing feature of the disease was the absolute nasal stenosis, somewhat relieved for the time by the removal of false membrane. He also noted a tendency to recurrence; in this observation he is alone.

Browne observes that while the croupous form may be found up to the time of middle life, the plastic form is mainly confined to the period of infancy and adolescence. He also states that the membrane in croupous rhinitis may be removed without exposing a bleeding surface and has none of the characteristics of diphtheria. Although there may be some rise in temperature at the onset of the attack, and the symptoms may be those of acute rhinitis with its resulting nasal obstruction of considerable degree, yet life is never in danger even though the vital energies may be severely depressed.

The cases which I desire to report were treated at my clinic at the St. Agnes Hospital, Philadelphia, in October, 1894. The patients were brother and sister, aged eight and eleven; the symptoms and conditions presented were similar. A description of one case will be sufficient:

The girl had been complaining for several days preceding. Three days before her visit to the hospital she had considerable nasal hæmorrhage, and on the following day complained of much pain and soreness in the nose. There was no history of exposure to diphtheria; of the three children in the family, two were affected, and the history given by the mother showed that both were affected at about the same time, yet there was possibly three days' difference in the date of the attacks, sufficient time to warrant the suspicion of the second child becoming infected from the first. The little girl never had diphtheria, but the brother had; both, however, have had measles and chicken-pox. On inquiry, it was learned that the hygienic conditions of the house and surroundings were not good; the house was not supplied with proper sinks and drainage, and the streets about the house were torn up. On examining the nose, there presented a membrane which extended from the nasal muco-cutaneous surface to the naso-pharyngeal membrane, involving the pharynx and tonsils. The membrane was distinctly laminated, appearing the same in both nostrils and completely obstructing nasal breathing. On attempting to remove the membrane, it was found to be firmly adherent, and when forcibly detached there followed considerable hæmorrhage, largely a capillary oozing; the bleeding occurred on the surface of the mucous membrane, and there was no ulceration. There was considerable difficulty in removing the membrane, it being detached in small pieces. The nostrils were cleansed with hydrogen peroxide (fifteen volumes) and this was followed with an alkaline wash; the surface was then mopped with a fifteen-per-cent. chromic-acid solution. In the case of the little girl a slight catarrhal condition followed; this was more marked in the little boy, but in neither case was there a re-formation of the membrane. The constitutional symptoms in each case were very slight. There was no glandular involvement and the laryngeal membrane was not involved. Although the general condition of the children was bad, yet the mother assured me their health was as good as previous to the attack. They were given simple tonic treatment. From these cases there were no others developed in the neighborhood. The day the little girl presented herself at the clinic, she came in contact with at least ten or fifteen children, and yet none were infected. Serum tubes inoculated from the infected area showed the presence of *Staphylococcus pyogenes aureus* and *Staphylococcus pyogenes albus;* this was from the first appearance of the growth in the serum tube, which was kept at a temperature of 37° C., the optimum temperature of the Klebs-Loeffler bacillus. Later stains showed a few streptococci, but on isolation only staphylococci were found, showing the streptococci to be non-virulent. The germ growth was slow in developing and experiments on rabbits and guinea-pigs showed very slight if any reaction. The microscopic examination of the material from the bleeding surface showed practically the same results, although no streptococci were found and only a few staphylococci; there was no Klebs-Loeffler bacillus present or any germ resembling it. The membranous exudate was hardened in picric and chromic acid, then infiltrated and sections cut. The sections showed organized and unorganized material, fibrin entangling in its meshes leucocytes and epithelial cells, the fibrin being distinctly laminated, the layers next the mucous membranes showing more organization than the central layer. While the organization was irregular and not complete, yet it demonstrated that, in order to even partially organize, capillary budding must have taken place.

As regards the symptoms of the non-diphtheritic exudates, as compared with those of true diphtheria, the location of the exudate can not be relied upon. In some cases of diphtheria of the severest type, and followed by paralysis and other sequelæ, there may be a very slight membrane visible. In reviewing the cases reported—as a rule, the cases believed to be non-diphtheritic—there have been slight if any sequelæ.

The non-diphtheritic condition is characterized by a deposit of fibrinous exudation constituting a false membrane, which presents the characteristic anatomical features of a croupous membrane—viz., one which is superimposed upon the epithelial layer and does not involve the deeper tissue.

McBride says the disease is distinct from diphtheria: no constitutional symptoms, intense local discomfort, and absence of Klebs-Loeffler bacillus.

Hall lays stress on the fact that in diphtheria the exudation is not confined to the nares, but appears also on the soft palate and fauces, and in diphtheria the constitutional symptoms are more marked, and that they may be of an adynamic character. The glands of the neck are enlarged; albumin is usually found in the urine, while in fibrinous rhinitis all these conditions are absent. And, moreover, diphtheria occurs in epidemics, whereas croupous rhinitis is a sporadic affection.

The attack begins like an ordinary cold, the nostril quickly becomes blocked, and the patient frequently complains of severe frontal headache. The real nature of the attack is only recognized by the expulsion of membranous shreds from the nose or by rhinoscopic examination. The secretion is more abundant than in acute rhinitis; it becomes more purulent and somewhat fœtid, and causes excoriation of the upper lip. The sæptum and the inferior and middle terminals are the favorite seat of the membrane, but it may occur on any part of the pituitary membrane.

Cohen recognized the disease as distinct from diphtheria, but with his exception, Bosworth says, most writers, up to within the past two years, entertain exceedingly vague ideas as to the distinctive character of the two affections.

In conclusion, in fifty-seven cases reported, fifteen showed the bacillus of diphtheria present either in a virulent or attenuated form, while in eight cases no bacilli of diphtheria were found; in six cases it was stated that no bacteriological examination was made, and in twenty-eight cases no statement was made, the diagnosis being based entirely on clinical data.

Personally, I believe the safe rule to follow is to treat all cases of membranous inflammation of the upper air-passages as if they were true diphtheria; at the same time I firmly believe there is a variety of fibrino-plastic exudate occurring in the nares which is not diphtheritic and is not contagious.

These two cases are the only ones I have ever seen in which the exudate was laminated and organized, and as far as I was able to determine by a careful search of the literature on the subject the first reported in which there was distinct lamination.

I am indebted to Dr. J. M. O'Malley, my clinical assistant, for kindly furnishing me with the history of the cases.

NOTE.—Since the foregoing was written an interesting article by Ravenel, on the subject of Membranous Rhinitis, has appeared in the *Medical News* for May 18th and 25th.

1517 WALNUT STREET.

HOW LONG SHALL THE PUERPERANT MAINTAIN THE RECUMBENT POSTURE?

BY T. RIDGWAY BARKER, M. D.,
PHILADELPHIA.

So much stress has been laid upon the importance of prolonged rest in bed in the recumbent position for the parturient by teachers and writers on the management of childbed that, in our efforts to carry out such doctrines to the letter, we have overstepped the mark, and so, instead of our patient reaping increased benefit from this position, she has been placed at a disadvantage.

Not but that rest of both mind and body is essential under these circumstances, that involution and general repair may proceed normally, but that the recumbent posture is necessary after the fourth day I think is open to serious question.

In breaking away from the traditions of the past it is not to be supposed that the obstetrician will permit his patient to leave her bed on the fourth day and walk about the room, or take other exercise of a baneful, not to say dangerous, character; far from it.

The womb can no more return to its normal size in four days, or fourteen days, than the fœtus can attain its maturity in such a brief period; but what is maintained is that four days is sufficient for the puerperant to recover from the muscular and nervous fatigue incident to a natural labor, and that after the expiration of that period she will be benefited by a change from the recumbent to the semi-recumbent posture.

If this liberty is permitted her, she will experience to a much less degree that annoying sense of restlessness and discomfort which is so hard to bear patiently; moreover, the nursing of her infant will be facilitated and drainage *per vaginam* greatly improved.

While she is lying on her back the tendency to the accumulation of the lochia in the posterior inferior pouch of the vagina is quite marked, thus favoring the entrance and development of pathogenic micro-organisms and her subsequent infection. By some, such matters may be considered trivial, but by the patient nothing is deemed unimportant which can in any way add to her comfort, or render more rapid and complete her convalescence.

When we are called upon to consider at what period in the puerperal state she may leave her bed, a new set of rules must govern our actions. If the patient is a primipara, three weeks is preferable to the risk run by allowing her to rise sooner. In multiparæ, when no complications exist, two weeks will, as a rule, be sufficient.

Going up and down stairs in all cases had best be postponed until the fourth or even fifth week. Every case, however, is in a measure subject to its own peculiar laws and modifying circumstances.

Involution is a slow process and can not be hurried. If interrupted, it becomes a very serious complication.

While every precaution is to be taken during each stage of the lying-in period, reason and not theory must be our guide.

The Oklahoma Territory Medical Society held its annual meeting on June 6th in Norman. Dr. Thomas A. Cravens, of Oklahoma City, was elected president, and Dr. L. Haynes Buxton, of Guthrie, secretary. The programme included the following papers: Narcosis, by Dr. Emil Simon, of Oklahoma City; Typhoid Fever, its Cause and Prevention, by Dr. C. D. Arnold, of El Reno; Nervous Troubles from Eye Strain, by Dr. L. Haynes Buxton, of Guthrie; Suppurative Pleurisy, by Dr. John A. Hatchett, of El Reno; Gastro-intestinal Diseases of Children, by Dr. John H. Scott, of Norman; and Small-pox, by Dr. John H. Hudson, of Norman. The society will hold a semiannual meeting in Oklahoma City on November 14th.

LIVING GREEK,

THE LANGUAGE OF PHYSICIANS AND SCHOLARS;

A LANGUAGE EASILY ACQUIRED.*

By ACHILLES ROSE, M. D.

Whenever I have the pleasure, the privilege, as I have to-night, of speaking on the Greek question, I am desirous that I might be gifted with the rhetorical talent of Demosthenes (Δημοσθένης) or of Cicero. Since I am not in possession of such gift, nay, since I possess no rhetorical talent at all, it is fortunate that the cause which I have at heart is of itself so fascinating that neither mine—if I had any—nor any one else's eloquence is required to inflame your hearts.

In speaking on the Greek question before this our association I am only complementing what you yourself, Mr. President, have said on the subject in your article entitled Modern Greek as an International Language, which appeared in our last year's *Register*.

The study of the classics, especially the Greek, has been greatly favored in this country during the past years by the establishment of an American school at Athens. This school was founded in October, 1892, by the American Archæological Institute, and is supported by yearly contributions from eighteen universities in the United States. One result of the establishment of this school has been the gradual diffusion among cultivated people of a more correct notion of the Greek language, and of the appreciation of the fact that it is not a dead, but a living language, and that what is spoken to-day by seven millions is practically the same tongue that was used by Plato, Demosthenes, and Plutarch.

As the Humanists, toward the end of the middle ages, brought about a revival of Greek learning in the schools, so may it be that a second renaissance may receive its quickening impulse in America, and that we may be at the beginning of a brilliant period of study of the Greek language, the result of which can but be most favorable to the advancement of true culture among us.

It is conceded that the study of the classical languages, and of the Greek more especially, can not be dispensed with; it is the attribute of every cultured mind, the attribute of every true scholar; it is conceded that the classics are powerful means to elevate, to ennoble our mind, our character. Greek is and should remain on the school plan; only another, a rational method of learning it, has to be adopted; it has to be learned practically, for practical purposes as well as for ideal. The most perfect, the ideal language will then speak for itself, and will inspire scholars to unite in agitation for its general adoption.

Before this can be accomplished, I say, it will be necessary to reform our methods of teaching Greek in almost all the schools and colleges in this country. It is difficult to understand why this ever youthful, living tongue, spoken by millions around the eastern shores of the Mediterranean, should be treated as a dead language by men of culture and learning. Their study of Grecian history ends with the Roman conquest, and they maintain with dogged pertinacity that, because Latin is dead, Greek must needs be so too. Yet journals and new books are published regularly in Greece at the present day, and any one versed in ancient Greek need but to examine one of these publications, fairly and without prejudice, to be convinced that their language is the same as that of the Anabasis or of the New Testament. There are differences, it is true, but they are merely in the way of simplification, such as every language—every living language, that is to say—undergoes in the course of time. Only what is dead, like the Latin, does not change any more.

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* Read before the New York County Medical Association, June 17, 1895.

The fact that the Greek language alone has preserved itself in all its original beauty through thousands of years is, to quote a modern Greek writer, "Because the beautiful is like the sunshine upon this world—because the beautiful lives for ever."

The Greeks of to-day speak a language which Pericles (Περικλῆς), Socrates (Σωκράτης), and Phidias would undeniably have understood. An unbroken chain stretches from those times down to the present. The Greek language is indeed immortal.

An interruption of Greek culture, of the use of the pure literary language, has never taken place, not even after the Latin conquest in 1204, or the Turkish in 1453. The immortality of the language is indeed due to its beauty, and to the beauty and magnitude of its classical literature.

The Greeks always looked upon new elements which might have been introduced into their language as vulgar corruptions. The Church, the government, the army, legislature, courts, and schools, and the writers of all centuries, used the pure, literary Greek.

The Attic, the classical language, with its forms, words, constructions, idioms, and orthography, has always been regarded as sacred, as something which alone had a right to existence, and which must be preserved as free as possible from corruption by new elements.

The influence of the Church has been most potent in the preservation of the old Greek, the literary tongue. All Greeks for centuries have had to hear in their churches, more than a hundred times a year, and for hours at a time, the fine old Greek; and these continued repetitions of the language, as it is spoken during mass and in sermons, has helped more than all else to transmit it unchanged through generations.

It is remarkable how this language, from which every other European language has drawn so freely, has been calumniated and called a barbarous mixture of Slavonic, Albanese, Turkish, Italian, and corrupt Greek. This statement is as untrue as the assertion that Greek is a dead language. The living and really spoken language of the higher and lower classes of the inhabitants of city and country is by no means a barbarous mixture, but rather pure, genuine Greek.

There exists in reality no new Greek. The words which deviate from the literary language of the classical period are at least as old as the words of the same meaning in the classics, although we can not find them in our school dictionary. *Κρασί* (wine) and *νερόν* (water) are beautiful words of the oldest Greek, perhaps older than *οἶνος* and *ὕδωρ*. The college lexicon does not know them.

We possess a lexicon of ten thousand Greek words, collected from inscriptions and other sources, not met with in any Greek text of the classical period. All these ten thousand words belong to the vocabulary of the living Greek. My Greek friends tell me that words and forms of speech in Homer and some other of the earlier poets, which in later classical writers have disappeared, are in constant use at the present day among the people, especially in the islands.

The pronunciation of Greek, as taught in our schools—which differs in a remarkable degree from that of the present inhabitants of Greece—lacks every scientific authority. It is ridiculous, it is absurd, to think that the ancient Greeks should have spoken like the modern college professor, and indeed there is the direst confusion concerning this pronunciation. No one understands the Greek of a foreigner, still less does one speaking school Greek understand the language of a native of Greece. Whatever has been said against the school Greek with its Erasmian pronunciation, even in the strongest expressions, has not been exaggeration; indeed, an exaggeration in condemning this evil is an impossibility. The method of instruction in Greek in our schools and colleges is faulty.

In order to have command of a language, it is, above all, necessary to know how the people speak; we must become familiar with the everyday language. Whoever is acquainted with the language of conversation of a people has the key to its literature as much as the natives themselves have.

As I have said already on another occasion, the Attic boy needed for reading the Greek poets, the Attic farmer for grasping the meaning of the orator at a public meeting, only a knowledge of the Attic conversational language in its simplest form. With this equipment all could understand the epics of Homer, the tragedies of Sophocles (Σοφοκλῆς), or the orations of Pericles (Περικλῆς).

As long as Greek is taught in the schools according to the present methods, so long will it be regarded as a difficult tongue to acquire. But Greek taught like other living languages, by one or the other of modern methods, is not more difficult to learn than French or Spanish, certainly less difficult than German.

We must begin with an A B C book, a first reader, and *not* with a grammar. As soon as we have, in the course of our instruction, learned to read good modern writers, we shall be in a position to read with understanding and highest enjoyment the old classical authors, and this without having to undergo the tortures of the old-time methods of translating these writers and parsing their phrases.

Let us do away with the study of the Greek by the eye only. Let us have a Greek school here in New York, with natives of Greece as teachers, with children of immigrated Greeks, with Greek as the language of the house, where our children can learn Greek just as they can learn French or German in French and in German schools in this our city.

The introduction of the study of the modern Greek language in this way into this our country would be an event of no less significance than was the work of the Humanists at the close of the middle ages.

SEMINAL CELLS AND CRYSTALS.

By WILLIAM MOSER, M. D.,
PATHOLOGIST TO ST. CATHARINE'S HOSPITAL, ETC., BROOKLYN.

Observations made on a number of specimens of seminal fluid have convinced the writer that the cellular elements contained therein are a little varied. In examining a fresh specimen we are, of course, attracted by the large number of fully developed spermatozooids in the field under the microscope, showing active oscillatory movement, the tail exhibiting a peculiar ciliated motion.

Next in order are large numbers of cells, varying in size, with a nearly homogeneous, quite refractile protoplasm, with or without nuclei. These cells present great differences as to size. I have seen them as small as a microcyte (small red blood-cell), as large as a red blood-cell, and again from three to five times as large. Most of the cells in the field are a little larger than a red blood-corpuscle and present a faint nucleus. Some cells are anuclear; in others the nucleus is large and distinct. A few were very large and contained two or more nuclei. These cells, no doubt from the seminal tubules, are seen in different phases of development. The ordinary round cell with a nucleus may show only a slight budding of one extremity *—a slight amœboid process of its protoplasm, with its nucleus pushed quite near the extremity of the cell. In a few cells the movement of the protoplasm has become more manifest: the cell assumes a pear shape, which, in a later developmental stage, becomes distinctly club-shaped—the so-called spermatoblasts; in short, cells in various phases of metamorphosis, from the round epithelial cell of the seminal tubule to the fully developed spermatozooids. Caryocinesis may be seen in the nuclei of a few cells, and amœboid movement of some cells when examined fresh on the warm stage. Cells resembling large lymphocytes were seen. In one instance the protoplasm of the cell is pale and finely granular, in another instance its protoplasm presents coarse granulations. These cells are very large, the size comparing with that of the large white lymphocyte of leucæmic blood. They show one or more nuclei. A cell membrane could not be discerned. At times a cell resembling a lymphocyte may be seen in a state of fatty degeneration. In one specimen a large cell—a giant cell—with a double-contoured cell membrane, yellowish, homogeneous protoplasm, with nucleus and nucleolus very distinct, was seen. A small cell, about a third the size of a red blood-corpuscle, was seen with a distinct cell membrane and nucleus. I am in doubt as to the nature of these cells, since they bear no morphological resemblance to the epithelial cells of the seminal tubules. In a dried specimen of spermatic fluid, at a time when the spermatozooids have ceased to move, crystals of varied shape are seen.

The crystal usually described by writers is a crystal regarded as identical with the Charcot-Leyden crystal, seen in the sputum in asthma, in the spleen and blood in leucæmia, in the marrow of bones, etc. When we compare the above-depicted crystals with the Charcot-Leyden crystal, the comparison becomes a contrast. Only two of them bear any resemblance to those crystals. They are much larger, and surely are not the small, pointed, octaedral crystals seen in the sputum of asthmatics. I have seen a few which might be regarded as identical with Charcot's, but the majority seen were wholly different.

I am convinced that there are cells and crystals in the seminal fluid the nature of which is yet to be determined. Corpora amylacea, hyaline bodies, small and large, and lecithin bodies occur; phosphate crystals are common, and fine needles resembling tyrosine are sometimes seen.

158 Ross Street.

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* My assistant, Dr. Westhoff, and I have seen this process sent out and seen it again retracted within the cell. The giant cell of Kölliker, in which I counted twenty-six nuclei, was seen in one specimen.

A CASE OF SEPTIC PERITONITIS FOLLOWING ACUTE GANGRENOUS APPENDICITIS.

OPERATION. RECOVERY.

By M. S. KAKELS, M. D.

In the *New York Medical Journal* of May 18th I was very much interested in the case of acute gangrenous appendicitis, with perforation, general suppurative peritonitis, etc., with recovery after operation, reported by Dr. Parker Syms before the Society of Alumni of Bellevue Hospital. The following contribution of an almost similar case is offered as an example where, in spite of impending death from collapse, operative interference with thorough drainage led to the recovery of a patient. In January of this year the opportunity was offered me of operating on a patient who was suffering from an attack of the diffuse form of septic peritonitis, occurring as the result of appendicitis. This case belonged to that class where a protecting wall of inflammatory adhesion was so incomplete as to allow the peritonitis and its products to rapidly extend upward toward the liver, among the small intestines toward the median line, and down into the pelvic cavity. I operated in the usual manner, but wiping out the abdominal cavity with dry sponges instead of flushing with sterilized water. This case is interesting on account of the fact that, notwithstanding the virulence of the septic process and of the unfavorable prognosis of a diffuse septic peritonitis, the patient ultimately recovered. The whole right abdominal cavity from the liver down into the pelvis was filled with purulent fluid mixed with fæces. The gut was found perforated at its junction with the appendix, through which fæces and gas escaped.

I saw the patient, Pauline K., aged seventeen years, on Friday, January 18th, early in the morning. She presented the following history: Her previous general health had been good, with the exception of occasional attacks of abdominal pain which she attributed to indigestion. No other previous history of illness. On the Saturday before I saw her she had one of these so-called attacks, for which no physician was consulted, thinking it would pass off as the others had. On Thursday evening, the 17th, while visiting some friends, she was suddenly seized with intense abdominal pain and vomiting. I saw her the next morning, Friday, at 8 A. M. Her temperature was 102° F., pulse 100. She had had chilly feelings with slight pain over the right iliac region which was gradually extending over the abdomen. Occasional vomiting. The diagnosis of appendicitis with probable rupture was made. Ice applications were ordered and operation was proposed but refused. Friday evening patient was about the same. Saturday morning I found dullness in right iliac region, extending over the right flank well into the back. Rigidity of right abdominal muscles, commencing tympanites. Pulse, 110 and small; temperature, 101°. Pain rapidly extending over the whole abdomen with increasing tenderness on palpation. The general expression bad, face flushed, rapid breathing, vomiting dark fluid; no gas, no stool. From the rapidity of the symptoms I more urgently requested and insisted upon an operation. The friends at whose house the patient was taken ill deferred until a consultation was had. Dr. Willy Meyer saw the case with me at 5.30 P. M. and agreed in the diagnosis and to operative interference. At 9.30 that (Saturday) night, forty-eight hours after the sudden onset of symptoms, the patient was brought to the table in a collapsed condition. Cold, clammy perspiration, rapid and feeble pulse. Incision was made along the border of the right rectus muscle. After the peritonæum was opened there was a gush of extremely offensive, dark-colored, purulent fluid, mixed with fæces, which flowed from a large area. The incision was lengthened above and below, which allowed the purulent fluid to escape from the region of the liver, from among the coils of small intestines in the median line, and from the pelvic cavity below. Careful exploration revealed no wall of adhesion in either of these directions. By gently lifting the coils of intestine, more pus escaped from hidden pockets; they were extremely congested and the appendix was found so gangrenous at its attachment to the cæcum that it would have been hazardous to remove it. At its junction with the cæcum a perforation was found through which fæces and gas escaped. Around this perforation there seemed to be a zone of gangrene, and a dark, congestive area around this. The peritonæum was rough and congested. The cavity was carefully and as thoroughly as possible wiped out with dry sterilized gauze sponges above, below, and along the coils of intestine. Three drainage-tubes were inserted—one above under the liver, one into the pelvic cavity behind the uterus, and one toward the median line among the small intestines. Around these tubes and in among the coils of intestines in every direction strips of iodoform gauze were inserted for additional drainage. The large abdominal wound was left entirely open. Silkworm gut was inserted for secondary sutures. Ordinary abdominal dressing was applied and the patient put to bed with a more than bad prognosis. The patient after the operation was very feeble. Hypodermic injections of stimulants and all necessary means were used to overcome shock. Next day there seemed to be a cessation of symptoms of septic peritonitis. Convalescence, though slow and tedious, ultimately resulted in recovery of the patient with a fæcal fistula which is gradually closing. I will not go into details of the after-treatment. The outer dressings were changed twice daily on account of discharge of fæces and purulent fluid. Gas continually escaped from the wound until free movements of the bowels took place. After a few days fresh strips of gauze were inserted, although two of the tubes had been removed. The tube running down into the *cul-de-sac* was gradually shortened as the discharge diminished, and finally withdrawn and replaced by a thin strip of gauze. To have removed the appendix in its gangrenous condition would have been a dangerous procedure, as I would have had an opening in the gut whose walls were surrounded by an area of commencing gangrene which afforded a bad ground for sutures. I thought it would be better to leave well enough alone, as it would have been impossible to close the perforation with its surrounding area of unhealthy tissue.

Noli tangere with this dangerous spot was better and wiser surgery than operative interference. The result in this case shows that it requires sometimes just as much judgment to know when one has done enough as to be too radical in our operative procedures.

This operation was done in a small room in a tenement house, with all the unhygienic surroundings one meets in such dwellings. Under the light of two gas jets and a petroleum lamp my assistants and myself were at the close of the operation markedly affected from the decomposition of the chloroform which was used for narcosis. Had the operation not been hurriedly effected, we probably all would have been overcome. It is well to be on one's guard in operating in small rooms under gaslight for the effects of the decomposition of the vapors of chloroform.

814 LEXINGTON AVENUE.

A CASE OF URETHRO-VAGINAL ABSCESS.*

By J. M. GREEN, M. D.,
CHARLESTON, S. C.

MARY G., aged twenty-nine years, married, but has never borne a child. Consulted me from time to time for dysmenorrhœa. Complained of severe pain on micturating, especially near or at her period. At times complained of a leucorrhœal discharge, which inconvenienced her considerably. Discharge was not constant, and at times would gush out in considerable quantity, especially when an extra exertion was made. Thinking that this was a simple leucorrhœal discharge, I had given her vaginal douches for some time, but with no effect. I finally made a vaginal examination, thinking that the discharge might be due to an endometritis. As I introduced the speculum she complained of intense pain, so much so that I had to withdraw it, and finish my examination by a digital exploration. As I introduced my finger she complained of great pain, and I felt along the anterior vaginal wall a tumor about the size of a walnut, between the urethra and vaginal wall. At no time did I notice any discharge from the urethra, but she afterward complained to me that she had an intense discharge, and that her urine was cloudy. I asked Dr. L. L. Williams, U. S. M. H. S., if he would come and make an examination with me, which he kindly did.

Placing the patient in the left lateral position, and introducing the speculum after considerable pain, we could plainly make out the tumor, an ovoid mass, between the urethra and vaginal wall, extending about three quarters of an inch from the meatus backward to the neck of the bladder. Passing a catheter, we could feel a firm but fluctuating tumor between our finger and the catheter. Withdrawing the catheter, we pressed out the contents of the tumor, which passed backward into the bladder, and not through the meatus, as we expected. Inserting the catheter again, a large quantity of thick, cloudy urine was drawn from the bladder (which subsequent examination proved to be loaded with pus), showing that the tumor was either an abscess or a broken-down cyst in the urethro-vaginal sæptum, which opened into the urethra about three quarters of an inch from the meatus. The catheter passed along the posterior urethral wall, entered the opening into the sac, and passed backward in close proximity to the bladder.

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* Read before the Medical Society of South Carolina, June 1, 1895.

The operation consisted in catching the mucous membrane and vaginal wall covering the tumor with a volsella and making an elliptical incision, including both, down to the sac. The anterior part of the sac was then carefully dissected out from its commencement backward to the extent of about an inch; this part was then removed, there being no further dissection of the sac because of the close relations of the posterior portion of the sac with the urethra and neck of the bladder. (There was considerable and troublesome hæmorrhage during the operation, and the wound was with difficulty kept free from blood.)

This being done, the anterior portion of the incision, about three quarters of an inch, was brought together with four silkworm-gut sutures, these extending well down through the tissues, including the urethral wall, so as to bring the edges of the opening into the urethra well together. The anterior portion of the incision, with the opening into the urethra, was thus closed and entirely shut off from the posterior portion, which was left open and packed with iodoform gauze. A tampon of iodoform gauze was also placed in the vagina, completing the operation. The urine was drawn off with the catheter that night. The packing in the wound and tampon were removed thirty-six hours after. Patient got on remarkably well, having suffered very little pain. She was given a 1-to-2,000 permanganate douche every morning. Stitches were removed on the eleventh day, and the wound was healing rapidly.

In speaking of the causes of this condition, etc., I quote from a paper read before the Johns Hopkins Medical Society, by T. S. Cullen, M. D., and published in the *Johns Hopkins Hospital Bulletin*, April, 1894. In this interesting paper Cullen gives a graphic account of a collection of cases reported at various times by different authorities, the tumors varying in size from that of a small nut to that of a goose egg. He says: "Hey, in his *Surgery*, published in Philadelphia in 1805, mentions a case which he treated in 1786. Since then none were reported until Foucher reported a case in 1857; no further cases can be found in the literature. Since then scattered cases have been published in France, Germany, Great Britain, and America."

The possible causes, briefly stated, are:

1. Congenital cysts, or those occurring in the newborn (Englisch).
2. A true urethral diverticulum, where all the urethra, coats take part (Lannelongue, Priestley).
3. Accumulation of secretions in a urethral gland.
4. Dilatation of a lacunæ of Morgagni, probably due to inflammation; closure of its orifice and subsequent distention with secretion (Winckel).
5. Dilatation and possible occlusion of Skene's tubules (Bohm).
6. Arrest of calculi in the urethra, with a diverticulum forming to accommodate the same (Cheron, Predpremier).
7. Traumatism, as a kick or injuries during labor (Duplay).
8. A suppurating cyst in the urethro-vaginal sæptum, and afterward bursting into the urethra (Hermann).

This condition, he says, "has been found in infants one year of age (de Bary), but may occur in persons of any age (Cheron); the usual age, however, is between thirty and fifty years."

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JULY 6, 1895.

THE *INDEX MEDICUS.*

It is difficult to express adequately the regret that is felt in the medical profession at the *Index's* suspension. The trouble seems to be that this feeling, although acute, is confined to too small a number of individuals who feel themselves able to assist in re-establishing the publication. Now and then it comes to our knowledge that a public-spirited person is willing to contribute materially to make good the deficiency in the income from subscriptions to that incomparable publication; in particular, it was with great pleasure that we lately received from Dr. Charles E. Sajous, of Philadelphia, now sojourning in Paris, the following letter:

"The early discontinuance of the *Index Medicus* is announced—a misfortune that every true American should deplore, a calamity to the professional world. If the physicians of the United States but knew what that noble publication has done and is doing for their country abroad, they would hardly permit it to die for the want of the few dollars it needs to continue its existence. Two hundred volunteers at twenty-five dollars a year each would still save it; they are surely to be found among the thousands of professional men who during a war would gladly offer their services to their country. The demise of the *Index Medicus* would brand the American flag with a stain. Who is going to permit it? Please find inclosed my check for twenty-five dollars."

Dr. Sajous's check, drawn to the order of the editor of this journal, has been indorsed to Mr. Davis, who was the publisher of the *Index Medicus*, and transmitted to him. We hope that many will be found willing to follow Dr. Sajous's example, and that thus the publication may be resumed. It seems well to suggest that those who are disposed to aid in the proposed movement should communicate directly with Mr. Davis. In saying this we are taking it for granted that that gentleman is willing to take charge of such contributions, and willing, too, to take part in any promising effort to revive the *Index Medicus.*

Since the foregoing was written we have received a letter from Mr. Davis in which he says: "As the matter now stands, the *Index Medicus* is in the hands of the editors. If a guarantee fund could be established which would secure the publisher against loss, I should be willing to undertake its publication again, without profit or remuneration, and would agree that any surplus which might be realized should be divided among the subscribers to the fund. If Dr. Sajous's suggestion—namely, that two hundred physicians subscribe $25 each to this fund, or as subscriptions to the *Index Medicus*—its future continuance would be guaranteed, and with the additional subscriptions of $10 which would probably be gained there would, no doubt, accrue a profit, which would be returned to the two hundred special subscribers *pro rata*, and perhaps reduce their subscription materially." Certainly Mr. Davis's course in this matter has been in every way commendable, and we hope that he may before long be again the publisher of the *Index Medicus*.

MINOR PARAGRAPHS.

A DEGREE IN STATE MEDICINE.

The *Journal of the American Medical Association* announces that the Rush Medical College, of Chicago, has arranged to grant the degree of doctor medicinæ civitatis. Candidates must be graduates in medicine of not less than a year's standing; their names must have been on the matriculation book for at least eight months before the examinations; they must have completed, after their registration, six months of practical study in a laboratory approved of by the faculty and have studied outdoor sanitary work practically for four months under an approved officer of health; and they must pass a rigid examination. Rush Medical College is to be congratulated on having taken a step that is distinctly calculated to advance sanitary work in America.

THE CITY BOARD OF HEALTH.

Dr. Cyrus Edson's resignation from the board seems to have been demanded of him in a manner that left him no alternative to the course he has taken, that of sending it in in a form to take effect at once rather than at the mayor's pleasure. The appointment of Dr. George B. Fowler to succeed him was not, so far as we are aware, among the things that were generally expected, but this at least may be said of it, that it is reasonably sure not to lead to acerbity in the board's proceedings. It is to be hoped that the board is not to lose the services of its president, Mr. Wilson, who is undoubtedly better fitted for the office than any other eligible man who could be found to fill it —to be eligible, one must *not* be a member of the medical profession!

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 2, 1895:

DISEASES.	Week ending June 25.		Week ending July 2.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	11	6	7	2
Scarlet fever	54	7	42	7
Cerebro-spinal meningitis	5	2	0	1
Measles	236	38	237	11
Diphtheria	254	37	216	42
Small-pox	1	0	0	0
Tuberculosis	128	73	97	75

The Late Professor Verneuil.—The *Lancet's* Paris correspondent says: In the late Professor Verneuil, who died on the evening of Tuesday, June 11th, at Maisons-Laffitte, near Paris, from broncho-pneumonia, and whose death was announced in the last issue of the *Lancet*, French surgery has lost a notable figure. For some months past his health had been far from satisfactory, and I remember how last summer, during professional visits I had occasion to pay at a house at Maisons-Laffitte, separated only by a wall from his villa, a loud, convulsive, almost pertussic cough used to attack him for several minutes at a time. Like the late Professor Peter, Aristide Auguste Stanislas Verneuil was a Parisian, having first seen the light in this city on September 29, 1823. Pursuing his medical studies at the Paris Faculty, he was at twenty years of age an *externe des hôpitaux*, and from the following year, 1844, until 1848 an *interne lauréat des hôpitaux;* then successively *aide d'anatomie* and *prosecteur* (demonstrator). He was in 1852 "received" as M. D., his inaugural thesis being entitled *recherches sur la locomotion du cœur.* In August, 1853, he successfully competed for the post of *professeur-agrégé*, his thesis being a brochure of 175 pages on the Venous System. It was, however, only three years later that he became a hospital surgeon. In 1862 we find him surgeon of the Lourcine Hospital (now rechristened Hôpital Broca), in 1865 of the Midi (now Hôpital Ricord), and then of the Lariboisière; in 1872 he passed to the Pitié; and finally, in 1889, he migrated to the Hôtel-Dieu. The lucidity of his clinical lectures procured him in 1868 his election as professor of surgery. His contributions to surgery were already numerous and important, his writings bearing upon diatheses and traumatisms, anatomy, history of medicine, tuberculosis, cancer, etc. Among his later works we may specially mention his *Chirurgie réparatrice* (1877), which constituted the first of the five volumes comprising his *Mémoires de chirurgie.* In 1877 he founded the *Revue de médecine et de chirurgie*, which was in 1880 split up into two journals. From 1887 to 1890 he published, in conjunction with collaborators, the *Études expérimentales et cliniques sur la tuberculose.* To the two chief plagues of suffering humanity—cancer and tuberculosis—he swore a deadly enmity, and he founded leagues against cancer and tuberculosis which were for some time productive of some good. Member of the Academy of Medicine in 1869, then President of the Surgical Society, he was in 1887 elected to fill the *fauteuil* of the late Professor Gosselin at the Académie des sciences (surgical section). In 1889 he was promoted to a commandership of the Legion of Honor and appointed life-president of the Congrès de chirurgie. In 1892 he voluntarily resigned his chair of clinical surgery, although he had not yet reached the limit of age necessitating such a step. When he delivered his farewell lecture at the Faculty the students and his old pupils who filled the theatre gave him an immense ovation. It is doubtful if the deceased professor will leave any marked trace of his surgical existence. Like many French surgeons of the old school, he was somewhat slow in adopting new ideas, and did not easily adapt himself to the new order of things. I well remember how opposed he was to the excision of tuberculous lymphatic glands, maintaining that the operation opened the way for fresh infection. But that he was an *esprit d'élite* is certain, and his qualities as a teacher were of a superior order. His oratorical powers were great, and he could manipulate the French language in a manner most conducive to the clear exposition of any given case. His appearance was distinctly in his favor, and his manners were most pleasant. He leaves behind him a crowd of devoted pupils, many of whom are now professors themselves.

A Remarkable Resuscitation.—[The following dispatch from Rochester, lately printed in the *Sun*, gives the account to which we referred in an editorial last week:

"Frank E. Grover, foreman of the Rochester Gas and Electric Company, who is employed at the power house at the lower falls, last evening received a shock of 3,000 volts of electricity, and was resuscitated after seventy-five minutes' hard work by a physician and three workmen. His recovery has again raised the question as to the fatality of currents of electricity under extremely high voltages. It was thought at first that Grover leaned against the dynamo and thus received only a portion of the current, but his explanation, given to-day, would go to show that his arm came in contact with the brushes, thus short-circuiting practically all the current through his body.

"The machine from which Grover received the current was a series-wound continuous current dynamo, carrying its full complement of sixty series arc light street lamps. The electromotor force was, therefore, 3,000 volts, with approximately ten ampères. Grover was standing near the arc lighter when the other station men heard a cry, and hurrying to the machine found him lying on the floor. As far as appearances went the man was as dead as any of the several victims of the electric current in this city. The men in the station had been made familiar with the d'Arsonval method of resuscitation, and they went to work at once to produce artificial respiration by raising and lowering the arms in rhythm and at the same time alternately pressing and releasing the chest. This was continued without interruption until Dr. Charles W. Wilbur, who had been summoned, arrived. The physician ordered the treatment continued, although at that time, Dr. Wilbur says, Grover was apparently dead. Shortly after the arrival of the physician, or nearly an hour after the shock was received, Grover began to show signs of life, and a few minutes later natural respiration set in. After a little he was removed to his home, and is doing well to-night, although he is very weak and sore. The physician pronounces him out of danger. The action of the heart is not yet entirely normal, although it is apparently approaching a normal condition.

"Grover was seen by a reporter this afternoon, and he tells this story of his experience:

"'I am feeling pretty fair, but I can't tell you how the accident happened. I don't know myself. All I remember is that I was standing near one of the dynamos, and the next moment I thought I was an angel. Then I knew nothing at all until I awoke and found the doctor and the men working over me. When I returned to consciousness I hadn't the slightest idea what had happened, and I was the most surprised man in the world when they told me that 2,899 volts had been pumped into me. I don't think that I leaned against the dynamo, as I have been an electrician too many years to do so foolhardy a thing. I must have moved my arm in such a manner that it swept the brushes, thus coming in direct contact with the current. My arms and legs feel stiff and lame and my muscles are quite sore, but I am feeling as well as a man could be expected after wrestling with lightning. I think I will be at work tomorrow all right.'

"Dr. Charles W. Wilbur, who had charge of the case, was seen to-night. He said: 'The station men pursued the d'Arsonval method of artificial respiration, pure and simple, and that is what saved Grover's life. When I first saw him, three quarters of an hour after he received the shock, he was apparently dead. There was no respiration and no heart action that I could detect. There is no means of determining the amount of current he was subjected to, but the electricians at the station are confident that he had received nearly, if not quite, 3,000 volts.'"

Dr. Cyrus Edson's Resignation as Health Commissioner.—On Wednesday of last week Dr. Edson sent the following letter to the mayor of New York:

"Sir: I have carefully considered your request made on the 24th inst., that I should hand you my resignation, to take effect on the appointment of my successor, with the general understanding that it might be held indefinitely, and I have concluded that I can not consistently comply with your wishes.

"From a business or political standpoint your proposition may perhaps be reasonable and right, but as I am neither a business man nor a politician, I can not but feel I would be seriously compromised if I accepted it. I have given the best portion of my life to the service of the board of health. Commencing on the lowest round of the ladder, I have held nearly every subordinate position to which a physician is eligible. Through all these offices I have been promoted without a backward step. I was appointed commissioner two years ago, without solicitation directly or indirectly. I have served through several epidemics, and have had the good fortune to direct my subordinates to such an effect as to repeatedly stamp out contagious disease when it seriously threatened the people of this city. I believe the board of health was never so efficient as at the present time, but my record, Mr. Mayor, is well known, and it is not necessary, nor does it please me, to recall it to the minds of my fellow-citizens. I feel that to accept your proposition and to remain commissioner of health under the condition you impose would be to part with an element of manhood which I prize highly—namely, self-respect. I am quite unwilling to hold the position for any time under new conditions not imposed by law. Therefore, in order to comply as nearly as possible with your request, I respectfully tender my resignation, to take effect on the 1st day of July next. I have the honor to be respectfully yours, Cyrus Edson."

The Late Dr. Alexander I. Aronson.—The Eastern Medical Society of New York has taken the following action:

Whereas, Our friend and beloved colleague Dr. Alexander I. Aronson, who was so highly esteemed by all who knew him as to his professional ability, reputation, and honesty, has been suddenly called away to his eternal rest, and

Whereas, The society has lost a member and sincere friend, whose place will be difficult to fill, and his family loses a blessing father and loving husband: therefore be it

Resolved, That we all regret the sudden loss of our late colleague, and that we all mourn our loss; that we extend to the family our heartfelt sympathy and sincere regret in this sad hour of affliction; and it is further

Resolved, That a copy of these resolutions be spread on the minutes of our society, and a copy to be sent to the bereaved family of our deceased colleague, and that they be published in the medical and local press.

H. B. Adler, M. D., *President.*
E. K. Browd, M. D.,
M. Carpe, M. D.,
[*Signed.*] M. Davidoff, M. D.,
M. Burstein, M. D.,
S. Brothers, M. D.,
Committee on Resolutions.

A Correction.—In Dr. Bors's article published in the *Journal* for June 29th, an error occurred on page 823, second column, sixteenth line. For "two hours and a half for two or three days" read *twelve or twenty-four hours.*

The Conditions of Dental and Veterinary Practice in the State of New York.—It is announced that hereafter persons who wish to enter upon the practice of dentistry in this State must pass an examination before a State board of dental examiners. The first board of State dental examiners appointed by the regents of the university is as follows: Dr. William Carr, of New York; Dr. William Jarvis, of Brooklyn; Dr. E. C. Baxter, of Albany; Dr. W. H. Belgrove, of Johnstown; Dr.

S. B. Palmer, of Syracuse; Dr. A. M. Holmes, of Morrisville; Dr. Frank French, of Rochester; and Dr. Southwick, of Buffalo. It is further announced that those who wish to begin practice as veterinary surgeons must hereafter pass an examination before a State veterinary board. The regents have appointed the first State board of veterinary examiners, as follows: Dr. R. S. Huidekoper, of New York; Dr. N. P. Hinckley, of Buffalo; Professor James Law, of Ithaca; Dr. C. D. Morris, of Pawling; and Dr. W. H. Kelly, of Albany.

The Mississippi Valley Medical Association.—The secretary, Dr. Frederick C. Woodburn, of Indianapolis, writes as follows: "The arrangements for the twenty-first annual meeting of this association are about complete. In response to the general invitation sent out in May, many letters are being received daily by the secretary. These letters are largely acceptances, and the outlook for the Detroit meeting in September is indeed bright. A number of excellent papers have been already received, and the scientific treat in store for those attending the meeting will amply repay them for the trip. The profession of Detroit promise a most delightful week socially; the ladies are especially urged to attend the meeting, and by their presence add to the enjoyment of the social pleasures. There is no more delightful season in which to visit the picturesque city of Detroit than the late summer. Located within a short distance are many beautiful river and lake resorts, making it possible to arrange some very pleasant side-trips. Lay aside your professional burdens during the first week in September, go with your family to Detroit, enjoy the intellectual feast during each day, and in the evening hours partake of the bountiful hospitality which the profession and good citizens of the city will extend to you."

A State University Degree in Medicine.—It is stated that the regents of the University of the State of New York have voted to confer the university degree of doctor of medicine only upon persons who have already received that degree or that of bachelor of medicine from an accredited medical school, as the result of not less than four years' study, and have subsequently spent a year in post-graduate study.

The Honorary Degree of LL. D. has been conferred on Dr. William H. Wathen, of Louisville, and on Dr. Francis J. Quinlan, of New York.

Change of Address.—Dr. Condict W. Cutler, to No. 135 West Seventy-sixth Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 16 to June 29, 1895:*

Lewis, William F., First Lieutenant and Assistant Surgeon, is granted leave of absence for two months and twenty-three days, to take effect on or about July 6, 1895.

McCreery, George, Captain and Assistant Surgeon, will be relieved from duty at Fort D. A. Russell, Wyoming, and will report in person to the commanding officer, Fort Niobrara, Nebraska, for duty at that post.

Pilcher, James E., Captain and Assistant Surgeon. The leave of absence granted him on surgeon's certificate of disability is extended four months on surgeon's certificate of disability, and permission is given him to go beyond sea.

Bradley, Alfred E., Captain and Assistant Surgeon, will be relieved from duty at Fort Custer, Montana, upon the arrival there of Shannon, William C., Major and Surgeon, and will report for duty at Fort Yellowstone, Wyoming, for duty at that post, relieving Gandy, Charles M., Captain and Assistant Surgeon. Captain Gandy, on being thus relieved, will report for duty at Washington Barracks, District of Columbia.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending June 22, 1895:*

Hochling, A. A., Medical Director, is placed on the retired list.

Marmion, R. A., Surgeon. Ordered for examination preliminary to promotion to medical inspector.

Winslow, G. F., Surgeon. Ordered for examination preliminary to promotion to medical inspector.

Woods, G. W., Medical Inspector. Ordered for examination preliminary to promotion to medical director.

Society Meetings for the Coming Week:

Monday, *July 8th:* New York Ophthalmological Society (private); New York Medico-historical Society (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

Tuesday, *July 9th:* Medical Societies of the Counties of Clinton (semi-annual—Plattsburgh), Chautauqua (annual), Greene (quarterly), Jefferson (semi-annual—Watertown), Madison (annual), Oneida (quarterly—Utica), Ontario (annual—Canandaigua), Rensselaer, Schuyler (semi-annual), Tioga (Owego), and Wayne (annual), N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Ky.; Norfolk, Mass., District Medical Society (Hyde Park).

Wednesday, *July 10th:* American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Tri-States Medical Association, N. Y. (Port Jervis); Franklin, Mass., District Medical Society (quarterly—Greenfield); Hampshire, Mass., District Medical Society (quarterly—Northampton); Worcester, Mass., District Medical Society (Worcester); Kansas City, Mo., Ophthalmological and Otological Society.

Thursday, *July 11th:* Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private).

Friday, *July 12th:* Medical Society of the Town of Saugerties, N. Y.; German Medical Society of Brooklyn; Cleveland, O., Medical Society.

Saturday, *July 13th:* Worcester, Mass., North District Medical Society.

Births, Marriages, and Deaths.

Married.

Collins—Gawtry.—In New York, on Thursday, June 20th, Dr. Howard D. Collins and Miss Helen Gawtry.

Edwards—Spink.—In Albany, N. Y., on Thursday, June 27th, Dr. Frederick Edwards and Miss Carrie A. D. Spink, both of Providence, R. I.

Groves—Barrett.—In Buffalo, on Thursday, June 27th, Dr. Wellington G. Groves and Miss Esther A. Barrett.

Hurd—Wheeler.—In Buffalo, on Thursday, June 20th, Dr. Arthur Hurd and Miss Mary L. Wheeler.

Jackson—Mitchill.—In New York, on Thursday, June 20th, Dr. Frank W. Jackson and Miss Helen Smith Mitchill.

Johnson—Anderson.—In Indianapolis, on Wednesday, June 19th, Dr. C. Johnson, of Buffalo, and Miss Jessie Dixon Anderson.

Le Beuf—Weaver.—In New Orleans, on Wednesday, June 26th, Dr. Louis G. Le Beuf and Miss Zema Hill Weaver.

Norrish—Baker.—In Buffalo, on Thursday, June 27th, Dr. William H. Norrish and Miss Sadie Baker.

Olmsted—Hubbell.—In Buffalo, on Wednesday, June 26th, Professor Everett Ward Olmsted, of Cornell University, and Miss Bula Hubbell, daughter of Dr. A. A. Hubbell.

Polak—Pitkin.—In Brooklyn, on Wednesday, June 12th, Dr. John O. Polak and Miss Bertha Louise Pitkin.

Staples—Barrett.—In Buffalo, on Thursday, June 27th, Dr. Loren H. Staples and Miss Susan M. Barrett.

Talbot—Phelps.—In Buffalo, on Thursday, June 27th, Dr. Ashton B. Talbot, of Philadelphia, and Mrs. Calista M. Phelps.

Van Ness—Reynolds.—In New York, on Friday, June 21st, Mr. Russell Van Ness and Miss Katherine Reynolds, daughter of Dr. Samuel M. Reynolds.

Died.

Aronson.—In New York, on Monday, June 24th, Dr. Alexander J. Aronson, aged thirty-seven years.

Buckley.—In Stamford, Conn., on Friday, June 21st, Dr. L. S. Buckley, aged thirty-four years.

Gorgas.—In Philadelphia, on Saturday, June 29th, Medical-Director Albert C. Gorgas, of the navy.

Morse.—In Baltimore, on Tuesday, June 18th, Dr. Edwin Malcolm Morse, of Louisiana.

Palmer.—In Janesville, Wis., on Saturday, June 15th, Dr. Henry Palmer.

Wilbur.—In Upper Montclair, N. J., on Tuesday, June 25th, Dr. J. G. Wilbur.

Letters to the Editor.

ESMARCH'S HÆMOSTATIC BANDAGE.

200 Ashland Boulevard, Chicago, *May 28, 1895.*

To the Editor of the New York Medical Journal:

Sir: Permit me to add a word to the remarks on the Esmarch bandage in your issue for May 11, 1895.

In the Presbyterian Hospital we have always simply applied the inch-and-a-half elastic strap, immediately after for a moment or two elevating the limb to be amputated. Pads are always placed underneath the Esmarch, and after amputation two separate ligatures are applied to the large vessels.

I have not known reactionary or consecutive hæmorrhage to follow this procedure or any of the Esmarch bloodless operations on the limbs.

The injury that does follow, however, in spite of precautions in applying the Esmarch, is an occasional pressure paralysis or neuritis. It is usually seen in those patients who have not the superfluous adipose tissue or well-nourished muscles to act as cushions. An uninterrupted recovery is, however, the general rule, although it is a great source of annoyance to the surgeon. Only about a month ago, after I had enucleated a small tumor from the posterior aspect of the wrist of a girl, there followed a typical "wrist drop" and complete paralysis of the muscles of the forearm supplied by the median and ulnar nerves. The Esmarch had been carefully applied, after padding, to about the middle of the arm, but, the arm being very thin, there had not been a sufficient protection to the ulnar and median nerves. The wound healed primarily, and since then a galvanic current of about four to eight milliampères has been applied to the nerves and muscles of the forearm for ten minutes three times a week. There was no reaction of degeneration, and now at the end of a month the use of the hand is rapidly returning.

G. Bertram Joyner, M. D.

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Twentieth Annual Meeting, held in Baltimore on Tuesday, Wednesday, and Thursday, May 28, 29, and 30, 1895.

(Continued from vol. xli, page 794.)

The President, Dr. Matthew D. Mann, of Buffalo, in the Chair.

The Present Treatment of Uterine Displacements.—Dr. Paul F. Mundé, of New York, read a paper with this title. He said that our views regarding the significance of uterine displacements had undergone a marked change in the last fifteen years. A larger experience had taught us that the symptoms of anteflexion in almost all cases were practically *nil*, and pessaries for anteflexion and anteversion were now rarely used. Personally, he had abandoned the use of intravaginal supports for the relief of anteflexion, for they had proved ineffectual. Where dysmenorrhœa and sterility were associated with anteflexion, good results would often follow dilatation and straightening of the canal, with the introduction of a uterine stem. The pessary devised by Dr. Eugene Gehrung, of St. Louis, was the only vaginal instrument that he knew of that would serve a good purpose in the treatment of anteversion with prolapse and cystocele. Experience had taught us that many of the symptoms formerly thought to be due to version or flexion were really due to tubal catarrh and relaxation of the uterine supports.

Retroversions of the first and second degrees rarely gave rise to symptoms, but retroversions of the third degree usually interfered with defecation and caused prolapse of the ovaries. In the treatment of this class of cases he had succeeded well with intravaginal supports, although, as stated in a former paper, he did not *cure* with pessaries more than about five per cent. of his patients. He had performed Alexander's operation on seventy-seven patients, and had succeeded in following many of them long enough to be assured of the permanency of the result. If the round ligaments were not found, it was the fault of the operator. He was as much in favor of the operation as ever, although admitting the difficulties attendant upon its performance. He did not approve of shortening the round ligaments through the abdomen, as recommended by several surgeons, excepting in cases in which the abdomen must be opened for some other and graver condition. He had done the other operation for retrodisplacement—ventral fixation—twelve times, and had met with fair success, but one of his patients had subsequently miscarried on account of the fixity of the uterus, and, in fact, the operation had never seemed to him to be founded on a correct principle. The plastic operations for prolapsus uteri had not proved successful in his hands. The plan recommended by Dr. Polk and others, of performing Alexander's operation through an incision in the vagina posteriorly, seemed to offer a distinct advance over other methods.

Experience with Ventro-fixation and Alexander's Operation.—Dr. A. Lapthorn Smith, of Montreal, read a paper with this title. He looked upon ventral fixation as one of the most satisfactory operations he had ever practised, because it accomplished the desired object with the smallest risk to the patient and with the greatest possible ease to the operator. It secured not only the elevation of the uterus, but also the raising of the vagina and intestines. It was often necessary to abandon the use of pessaries because of the pain they produced, their interference with sexual intercourse, or their uselessness owing to the large size of the vaginal outlet. Alexander's operation often proved to be a complete failure because of slight adhesions of the ovaries and tubes which could not be diagnosticated before the operation. Moreover, it was not wholly free from risk, as he had known it to be followed by hernia and by suppuration. He had had to abandon an Alexander's operation and do ventral fixation, because the round ligaments were so poorly developed as not to be capable of furnishing the requisite support. It should be noted that ventral fixation did not place the uterus in an immovable position, as many supposed. This fact had been demonstrated to him in a case in which he had had to do laparotomy subsequently, and in which the uterus was found capable of the normal movements, its attachment consisting of a band of tissue of about the size of a lead pencil.

Alexander's Operation.—Dr. Clement Cleveland, of New York, followed with a paper on this operation, which, he said, he considered to be one of the most beneficent operations ever devised. That the operation was a difficult one none would deny, but that it was not dangerous was demonstrated by the large number of times it had been performed with very few deaths. Expert operators usually succeeded in finding and drawing out the round ligaments, and it was only the inexperienced ones who stated that these ligaments were sometimes absent. Patients who had become pregnant after this operation had been found to have the uterus still in good position after delivery; nevertheless, it was wise for patients to avoid becoming pregnant for at least a time after the operation, and for the physician to give special attention to the support of the uterus after labor. Formerly he had done ventral fixation in retrodisplacements, but since he had obtained such good results with Alexander's operation he felt that the graver operation of ventral fixation was not justifiable or necessary. Alexander's operation was indicated in cases of retrodisplacement with prolapse of one or both ovaries, where pessaries could not be worn, and where the vaginal pouch was too shallow to retain a pessary. The operation was contraindicated where there were adhesions or disease of the uterus or appendages. The chief causes of failure were insufficient drawing out of the ligaments and the occurrence of suppuration. The ligaments were rarely too thin and weak to give proper support to the uterus. Previous to this operation the vagina should be thoroughly cleansed, the cervix and perinæum repaired, if much lacerated, and a proper pessary inserted. The latter should be worn for at least two months after the operation. An incision not over an inch in length should be made from the pubic spine, in the direction of the inguinal canal, down to the tendon of the external oblique muscle. By pressing on either side of the pillars of the ring, the cellular membrane would be made to pouch. After having isolated the round ligament, it was to be drawn out about four inches, and the same procedure repeated on the other side of the body. The round ligaments were to be secured in position by sutures of silkworm gut. The patient was to be kept in bed for three weeks.

Dr. Davenport, of Boston, said that in his experience Alexander's operation had not always relieved the symptoms of uterine displacement, even when there had been no evidence of adhesions. The patients not infrequently experienced pain in the situation of the incision and numbness along the groin, and hernia was apparently a more frequent sequela of this operation than had been generally supposed. For these reasons the sphere of usefulness of this operation was extremely limited.

Dr. Ely Van de Warker, of Syracuse, said that it was very common to find women who experienced very little difficulty from a retroflexed uterus until they entered upon married life. Such patients, he believed, could be very satisfactorily treated by the judicious use of an intra-uterine stem. He could not but feel that Alexander's operation was unscientific, for to treat the round ligaments was to treat results rather than causes. He did not believe that there was any proof that the round ligaments were the organs that held the uterus in normal anteversion.

Dr. Henry C. Coe, of New York, said that the function of the round ligament was to keep the uterus sufficiently forward to permit of the intra-abdominal pressure maintaining the uterus in the normal position; hence the operation could not permanently cure prolapse. One common cause of failure to relieve patients by Alexander's operation was an inflammatory condition of the sacro-iliac ligaments. In many cases of prolapse of the ovary the parts were too tender to allow of the use of a pessary. By Alexander's operation the ovary was elevated enough to relieve the symptoms.

Dr. T. A. Emmet, of New York, said that while observing Alexander operate in some of his early cases he had become impressed with the uselessness of the operation, and had therefore never performed it. It was congestion and not displacement that caused the symptoms of which these patients complained. He believed that if Alexander's operation or ventral fixation ever gave relief it was because these operations happened in these instances to result in the uterus being placed in such a position as to restore the normal circulation of the parts.

Dr. Polk said that personally he believed that if Alexander's operation were done in proper cases the result would be the same as that described by Dr. Cleveland. Ventral fixation was a good operation, but should be limited to cases in which laparotomy had to be performed for some other reason. He did not know of an operation the technique of which had borne the test of time so well as Alexander's, and hence we should gratefully remember the man who had devised it.

Dr. Baldy said that where there was inflammatory disease outside of the uterus the case was unsuitable alike for ventral fixation and for Alexander's operation. In his own practice he had sometimes found himself unable to determine the existence of slight adhesions; hence he had had difficulty in deciding what cases were proper ones for Alexander's operation. The pessary would answer very well in the majority of cases in which Alexander's operation was suitable.

Dr. G. M. Edebohls, of New York, said that ten years ago he had advocated before the society the performance of plastic operations combined with ventral fixation as a cure for prolapse. He had been much pleased with the results in the few cases in which he had tried the new Freund operation, which was simplicity itself. Until recently he had shared the opinion that had already been expressed in this discussion—viz., that if the round ligaments were not found it was the fault of the operator; but he had seen two cases in which these ligaments had taken an abnormal course. Immediately after emerging from the external ring, the round ligament, instead of passing downward, had passed upward, and had been attached to Poupart's ligament.

Dr. Cleveland said that the pain observed after Alexander's operation usually disappeared after a short time. He had reported in his paper eighty-four cases in which the operation had been done for the relief of symptoms, and in a large majority of these the symptoms had been relieved after a time.

Abdominal Section for Puerperal Septicæmia.—Dr. J. Montgomery Baldy, of Philadelphia, read a paper with this title. He reported a case which he believed to be the first one in which abdominal section had been deliberately performed for puerperal septicæmia. In February, 1887, a patient had come under his care on the second or third day after her confinement, complaining of having had a chill. Examination had shown a tender and distended abdomen, a rapid pulse, and a high temperature. Her symptoms had been relieved by treatment, and she had disappeared from observation. In a month from the date of her confinement she had again sought treatment, and at this time her pulse had been 130 and her temperature 102° F., and she had frequent chills and sweatings. The abdomen was intensely tympanitic and tender, and her general condition was so bad that it seemed that she must certainly die. The uterus was in a state of subinvolution, and on the left side there was a large, boggy, and tender mass. On abdominal section, the left Falloppian tube and ovary were found distended with pus, and they were removed. The patient had made a speedy recovery. This woman, the speaker said, had been an excellent type of a class of patients suffering from puerperal septicæmia in which the only hope lay in abdominal section. It had now become an established practice to remove pus accumulations at this period of a woman's life, whether they had occurred prior or subsequent to pregnancy; and it was much safer in most cases to evacuate it at a point of election than to allow of its spontaneous evacuation. He desired to call particular attention to the folly of waiting until the patient could be built up and prepared for the operation. The patient was already in an exhausted condition, and the danger of additional absorption of septic matter far outweighed the good that might possibly accrue from further medication.

But there was another and larger class in which there was an infection of the Falloppian tube, the ovary, and possibly the peritonæum, without any formation of pus, but with more or less tubal and ovarian disease and exudate into the peritonæum and connective tissue. The question of treatment must be determined by the general condition of the patient and by the ability of the physician to decide whether or not suppuration had occurred. In general, it might be said that where there was a puerperal salpingitis, with a pelvic peritonitis dependent upon it, without pus being present, it was permissible to delay operation, and in doubtful cases the patient should be kept under observation for a time.

Infection passing from the uterine cavity through the Falloppian tubes into the peritoneal cavity, and terminating in a septic or suppurative peritonitis, required treatment which was dependent upon whether or not the inflammation remained local or became general. So far as he knew, there had never been reported an undoubted case of general purulent peritonitis from any cause whatever in which recovery had followed abdominal section or any other line of treatment.

In puerperal cellulitis, that variety in which the infection had found its way from the uterine cavity through the lymph channels and blood-vessels into the surrounding connective tissue, the problem was a much more difficult one. If the tubes and ovaries were distended with pus, abdominal section and removal of the offending organs were indicated. It had been found in these cases that, although the entire offending tissues could not be removed, a large proportion of the infiltrated area might be reached, and that the portions left were so opened as to favor drainage. If the physician felt that the chances of recovery were good, provided there was no more absorption of septic matter, then it became his duty to stop, or at least minimize, the septic absorption. As a rule, nothing could be accomplished by an operation if it was not performed within the first week or two.

Another equally difficult lot of cases included those in which no disease of the pelvic peritonæum, tubes, or connective tissue was demonstrable by examination, and yet absorption of septic material was taking place from the uterus. Where intra-uterine douches, the application of carbolic acid and gauze packing failed to relieve the symptoms, hysterectomy should be promptly performed. The field for hysterectomy in puerperal cases was certainly a very narrow one, but it was indicated in a few cases, and so far the success following this procedure had been encouraging.

The author concluded his paper by giving the histories of nineteen cases of hysterectomy by American operators, with seven successes.

Dr. Ferdinand Henrotin, of Chicago, said he could not agree with the reader of the paper that there was no more danger in draining an abscess abdominally than vaginally. The general condition of the patient would determine whether or not it was wise to resort to abdominal section, or even to hysterectomy. Where there was a septic, diffuse, purulent peritonitis arising from a *primary* rupture, a very early operation would sometimes prove successful, but if the peritonitis was due to secondary rupture—*i. e.*, of a cavity in which the pus had been retained for some time—recovery was practically out of the question.

Dr. W. Gill Wylie, of New York, said that those who had treated puerperal septicæmia by dilatation, curetting, and packing would be surprised at the results following hourly irrigations of the uterus. He was sure that general septic peritonitis could be cured by an early operation.

(*To be continued.*)

PHILADELPHIA ACADEMY OF SURGERY.

Meeting of May 6, 1895.

The President, Dr. Thomas G. Morton, in the Chair.

An Incised Fracture of the Patella in which Wire was Employed.—Dr. H. R. Wharton exhibited a patient, a man about thirty years of age, who had been brought into the Presbyterian Hospital, June 9, 1894, with an incised wound of the knee. He said that a cleaver had been thrown at him, which had divided the patella almost transversely and had laid open the joint. The speaker had seen him a few hours after the accident. He had washed out the joint and had put one or two heavy silver-wire sutures through the fragments of the patella and had sutured the capsule with a few stitches of catgut. The patient had been kept five weeks in bed and had returned to his work in thirteen weeks. He had regained perfect motion in the joint and could flex and extend the leg and had no trouble in walking.

A Partial Amputation of the Foot.—Dr. Wharton reported also the case of a man who had been injured by being run over by an engine. He had been brought to the hospital in September, 1892, and the speaker had seen him a very short time afterward. He found that the patient had had a complete crush of the anterior part of one foot. He had done a Syme amputation, and had not seen the man for three years. He wore an artificial apparatus and walked very well and was employed on the railroad as a switch-tender. He had a very good bearing stump. There was a good elastic pad under the bone. The apparatus was simply a shoe with a brace, with which he got along very well. He was actively employed and had to run to throw switches. In walking, the weight of the body came directly upon the heel.

Simultaneous Amputation of the Leg and Partial Amputation of the Foot.—Dr. Wharton showed a man who had been thrown under a car so that both wheels had passed over his left foot and had crushed the right leg and made a compound fracture of the left thigh, requiring removal of part of the shaft of the bone. He had done amputation of the leg at the upper third and partial amputation of the other foot. In the foot he had first thought he would do a Pirogoff, but had decided to leave a portion of the astragalus in place, and to saw through the os calcis and bring its sawn surface in contact with the astragalus. It was seen that the patient had some motion in the ankle joint. He wore a peg-leg on one side and a short shoe on the other foot (the left). All the force of walking and weight of his body came on the pad on the sole of his foot.

It seemed, the speaker said, as if there was an advantage in having some ankle-joint motion. If the patient should wear a properly made shoe, it might be possible for him to have even better motion than he had. He could now walk between five and six miles every day without trouble.

Dr. Wharton said that he was glad to show these cases of partial amputation of the foot, because there was a tendency at the present day to cry down this form of amputation. Many surgeons thought that if part of the foot was destroyed it was better to make an amputation at what was called the point of election in the upper third of the leg. He had had many cases of this kind, but he had not seen a man who had come into the hospital with a crush of the foot who would not have preferred to have a partial amputation of the foot to an amputation of the leg above. He had seen several cases after Chopart's operation in which the results had been very good, and the patients could walk or run without trouble.

The President thought that it would very much add to the comfort of this man if he would have a rubber cap on the end of his peg-leg. Such an addition was commonly very satisfactory.

Dr. John Ashhurst, Jr., asked if this patient could run. The members would remember, he said, that in a paper written by the late Dr. Addinell Hewson, he alleged as an advantage of Pirogoff's amputation that the patient was able to run as well as to walk. The same claim had been made for amputation by Syme's method, and in such a case as the present, which might be called one of Hancock's amputation, the ankle joint being preserved, the running power should also be maintained. He observed that this patient could run, though not very gracefully.

Operation for the Radical Cure of Hernia.—Dr. Richard H. Harte presented two patients, aged sixteen and fifty years, respectively. Both had been hospital patients upon whom he had done a modification of the Italian operation. The operation had not been exactly a Halsted. In the boy there had been a scrotal hernia upon each side. He had done the operation first upon the left side and had repeated it on the right in the course of a few days. In the boy the hernia had existed since his birth. Dr. Harte had used kangaroo tendon in both cases and had found great difficulty in getting it perfectly sterilized. It was unfit for use as it came from the shops in oil. He had taken it out of the oil and had put it in corrosive ether, 1 to 2,000. The last patient had become infected from the sutures.

In these cases he had not reduced the size of the cord as it had not been necessary. Where there was a redundancy of tissue, he reduced it, but he had not found it necessary in either of these cases.

Dr. William J. Taylor said that with regard to the kangaroo tendon, Dr. Harte spoke of that which was kept in oil. Now, the German authorities had found that where a substance was kept in oil it was much more difficult to disinfect and much more liable to infect than where no oil was used. He had used for some time the kangaroo tendon from the makers who prepared it in alcohol under high pressure. It was the same that was used by Dr. Coley, of New York. It could be used directly from the solution in which it came from the manufacturers and he had seen no bad results from it; but he had seen bad results follow the use of the preparation of kangaroo tendon according to the method recommended by Dr. Marcy, of Boston.

Dr. Harte thought that Dr. Taylor had misunderstood him with regard to the use of the tendon. He had taken it out of the little box in which it had come and had treated it as stated.

Osteo-Lipo-Chondroma of the Upper End of the Humerus; Resection of the Humerus.—Dr. Thomas R. Neilson reported the case of a young man who had suffered from a tumor involving the head and upper end of the shaft of the right humerus. He had seen him first in the early part of last February. His history had been as follows: J. T. P., twenty-one years of age, had worked on a farm until two years ago, when he had learned the trade of electrical construction, in which his work had been light. Family history good; no history of tumors among relatives. In June, 1893, his attention had been called by a fellow-workman, who had seen him stripped, to an enlargement of the humerus, the size of a pigeon's egg. One year later it had slowly grown to twice that size. Afterward it had grown more rapidly, and in November, 1894, it had begun to cause inconvenience by its size—limiting the motions of the joint, and giving rise to a sensation of numbness occupying the back of the arm as far down as the elbow; there had also been loss of sensation in the fingers, and he had noticed some diminution of power in the hand, especially in using the hammer. At no time had there been any pain in the growth. There had been no history of injury to the shoulder.

Upon examination, Dr. Neilson had found the upper end of the humerus markedly enlarged, the growth being hard and immovable, and having an irregular surface, the larger portion of it projecting inward toward the axilla, and preventing complete adduction of the arm. From the history, the slowness of the growth, the absence of pain, the irregularity of the surface, and the uniform density of the mass, he had believed the tumor to be an enchondroma, and felt that resection was advisable. In this opinion Professor Ashhurst, who had kindly examined the patient for him, had concurred.

The patient had been admitted to the Episcopal Hospital on February 7, 1895. The mesurements of the right shoulder as compared with the opposite side had been as follows: Around the most prominent part of the head of the bone, just below the acromion (arm adducted), right, eighteen inches; left, fifteen inches; two inches below the acromion (arm abducted) the circumference of the right shoulder had been fourteen inches and three quarters, and of the left twelve inches.

On February 13th, with the assistance of Dr. Harte and Dr. H. C. Deaver, Dr. Neilson had resected the growth by the deltoid flap operation. Starting the incision at the tip of the coracoid process, he had carried it downward along the groove between the deltoid and pectoralis major, and then across the arm to the outer side of the level of the insertion of the deltoid. He had next dissected back the skin and superficial fascia about an inch for the whole extent of the incision, and then divided the deltoid transversely about two inches above its insertion. The flap being turned back, the tendon of the long head of the biceps had been freed from its groove and held to one side, the capsule of the joint had been opened, the insertions of the supraspinatus and infraspinatus and teres minor had been severed, and the attachments of the subscapularis had been divided. The growth had been so large that it had been found impossible to complete disarticulation until the attachments of the coraco-brachialis and of the pectoralis major had also been divided. This having been accomplished, he had sawed through the humerus just above the insertion of the deltoid. After making the section he had noticed a suspicious spot of degenerated tissue remaining, and, pushing back the periosteum with the insertion of the deltoid, he had cut off adother inch of the bone.

Throughout the operation there had been no arterial hæmorrhage of moment, only a few muscular branches requiring ligature; but the cephalic vein had been, unfortunately, slightly torn at the beginning of the operation, while pushing it aside in the groove between the deltoid and the pectoralis major, and again later when delivering the growth. He had tied it below the tear, and again some distance further up, and had resected the intervening segment—about five inches in length.

This having been done, the wound had been flushed with normal salt solution, and the deltoid had been united with several quilted sutures of kangaroo tendon. A large rubber drainage-tube had been inserted, and the wound had been closed with silk sutures. A bichloride-gauze dressing had been applied and the arm bandaged to the side, a large axillary pad supporting it. The patient had done remarkably well, and the wound had healed kindly.

There had been no noteworthy occurrence until the eighteenth day, when it had been found that, at a point about the centre of the wound, just over the anterior axillary fold, the union had broken down, and there had been a slight purulent discharge. The cause of this had been found to be one of the kangaroo-tendon sutures, which had been working its way out. Four days later another of these sutures had been discharged from the little sinus, and again in five days a third one. The sinus had then healed firmly.

On March 30th the patient had been discharged from the hospital. At that time the contraction of the deltoid showed that it had united firmly, in spite of the fact that three of the kangaroo sutures had cut their way out, owing to imperfect sterilization.

The patient had very good motion of the arm, and he stated that he had returned to his former work at electrical construction. The specimen presented by Dr. Neilson showed the tumor to be nearly twice the size of the fist, and to have grown largely toward the inner aspect of the bone. A section of the growth had been examined by Dr. Joseph McFarland, pathologist to the hospital, who had reported the microscopical diagnosis to be osteo-lipo-chondroma.

Remarks upon Trephining the Cranium.—Dr. John Ashhurst, Jr., stated that he had performed the operation of trephining the skull forty-one times, not including those cases in which he had merely opened the frontal sinuses, nor those in which he had removed bone fragments without using the trephine. Of these forty-one cases twenty had ended in recovery and twenty-one in death, showing a mortality of little more than fifty per cent. In many instances he had refrained from interference when other surgeons would have operated, so that his cases had been of an unfavorable type, and the mortality had no doubt been higher than if he had operated more indiscriminately.

The details of these cases were as follows: Twenty-four had been primary operations for compound fracture, with eleven recoveries and thirteen deaths, two had been operations during the intermediate period, both successful, and three had been secondary operations, with one recovery and two deaths, both in cases of abscess.

As far as it went, he said, this analysis confirmed what had so often been pointed out, that there was not as much urgency in operating upon compound fractures of the skull as there was in compound fractures of the extremities. In the latter, the sooner the operation was done, if the patient was able to bear it, the better. This had long been the rule in military surgery, when amputation was required, and some years ago he had collected extensive statistics from civil practice which had showed that the same rule of procedure applied there. But this was not so in compound fractures of the skull, and the proportion of recoveries was larger in delayed cases than when the operation was done immediately, as was well shown by Bluhm's statistics. At the same time, in a bad case, where an operation was evidently necessary, he did not advise delay; but early trephining was not so imperative as in early amputation for compound fractures of the long bones. Trephining for suppuration, occurring as the result of injury, was usually fatal.

In three cases the speaker had operated for syphilitic disease, with two deaths and one recovery. In the latter case, besides evidence of syphilitic brain disease, there had been painful nodes on the skull, and he had operated by dividing the nodes with a Hey's saw, and had then made a single opening with the trephine, so as to relieve the intracranial tension. The patient had been much benefited for a time, and had left the hospital relieved though not cured. The fatal cases had been in patients suffering from syphilis of long standing, with necrosis and intracranial suppuration.

Dr. Ashhurst had been induced to trephine in three cases of evilepsy, all the patients having recovered from the operation. One, an epileptic with suicidal tendencies, came under his care at the University Hospital in October, 1886. After the operation the patient had been much benefited as long as he had remained under observation. In the other two there had been no evident improvement, though both had done well as regarded the operation. In a case of melancholia, following an old fracture of the skull, trephining had given no relief, and of two cases in which he had operated for convulsions, etc., following an old injury, one had terminated fatally, while no permanent gain had resulted in the other.

He had operated unsuccessfully upon three patients for the cerebral complications resulting from disease of the middle ear. Statistics had shown that many lives had been saved by trephining under these circumstances, but in his own cases, though the abscesses had been reached and evacuated, the patients had died.

Although he had thus operated in twenty-one fatal cases by trephining, in only one case had the operation seemed to have been responsible for the patient's death. This case had been that of a child with a depressed fracture over the lateral sinus. On removing the depressed bone profuse hæmorrhage had occurred, and the patient had died in consequence. The speaker said he had not then learned the futility of attempting to check bleeding from the brain sinuses, except by prompt plugging. He had had four cases since in which the longitudinal sinus had been opened, and in two of them the patient had recovered. In a third, bleeding had readily been controlled by pressure, but ultimately death had followed; while in the fourth a clot had formed in the sinus, giving time to apply a lateral suture to the divided vessel. This case had been an interesting one; it had been that of a boy who had been injured by a nitroglycerin explosion, a piece of the metal having been found lodged in the longitudinal sinus, causing a clot as mentioned.

As regarded the locality of the injury, Dr. Ashhurst found that of fractures involving the frontal bone, omitting those simply involving the frontal sinuses, there had been five, with four recoveries and one death. These figures, he said, did not confirm the general impression that there was special danger in fractures of the frontal bone. Indeed, much more depended upon the amount of injury to the brain than upon the place of the fracture. In one case the indication for trephining had been bleeding from the middle meningeal artery, and in that case the patient had recovered. He had been an athlete, who, while playing football, had come into violent collision with another player, sustaining a fissured fracture of the parietal bone. He had been stunned at the time, but had soon recovered consciousness; in the course of half an hour, however, convulsions had come on, followed by coma. He had been brought to the hospital, and Dr. Ashhurst had applied the trephine, evacuating a considerable quantity of clot; the patient had made an uninterrupted recovery.

Dr. Wharton stated that he remembered the case that Dr. Ashhurst had referred to, as he assisted him in the operation. As soon as the fractured bone had been elevated there had been a great gush of blood, and the patient had died in a few minutes. He was sorry that Dr. Ashhurst had not said anything about fractures of the base of the skull. He would like to have had his views as to the use of the trephine in this class of cases.

Dr. Harte remarked that he had seen two cases, in both of which recovery had followed. Some years before a man had been brought into the Pennsylvania Hospital with a fractured skull and brain substance oozing from the ear. For several months he had seemed melancholic, but had finally recovered with improved mental condition. The next case had occurred only a few months before. A child had fallen down stairs, and had been found unconscious with brain substance flowing from the ears. That child had recovered without any alteration or impairment of the mental faculties.

The President asked Dr. Ashhurst if, in cases where there was a marked depressed fracture of the skull, he would prefer to leave it and wait for developments, or would he, in his judgment, think it best to proceed at once?

Dr. Ashhurst said that he would not push the argument from statistics, and that in cases in which the operation was clearly indicated he would operate at once; but that in cases where there was a doubt in the mind of the surgeon as to whether he should operate or not, a short delay would not be as injurious as it would be in the case of amputation. In cases of impacted fracture his practice had been, as a rule, not to interfere in the absence of symptoms. In cases where there was no opening into the cranial cavity and where there were no cerebral symptoms, he thought the surgeon was justified in waiting for more definite indications. At the same time he found himself more inclined to operate than he had been twenty years before, on account of the greater safety afforded by modern methods of wound treatment.

With regard to Dr. Harte's question, he stated that he did not recall any case of discharge of brain matter from the ear, but loss of brain substance not infrequently occurred at the seat of fracture. With regard to the watery discharge from the ear, he had often observed that, as long as the discharge continued, the patient might do well, but that if it suddenly stopped the patient would probably become comatose and die in a few hours; the arrest of this flow seemed to increase the pressure upon the brain.

With regard to fractures at the base of the skull, the speaker had not seen any case in which he thought trephining had been indicated. He thought that an attempt should be made to prevent infection in these cases by cleansing the ears, and, as far as possible, the nasal and buccal cavities. After securing cleanliness he relied upon the use of calomel and Dover's powder, with hygienic treatment, rest in bed, cold to the head, laxative enemata, etc., and by these means recovery would be obtained in a considerable number of cases.

The President said that in cases of compound fracture of the skull, with probably slight depression, he had always given the patient the benefit of the doubt. He thought it was much safer to remove the disc of bone than to run any possible risk from depressed fracture. He always preferred the early operation in these cases rather than to delay.

Rupture of the Urethra accompanied by Extensive Extravasation of Urine Successfully Treated by Perineal Section and Retrograde Catheterism.—Dr. Orville Horwitz read a paper on this subject in which he said that retrograde catheterism had first been performed by Verguin in 1757 by the introduction of a catheter into the urethra through a pre-existent fistula of the bladder. Sedillot, writing upon the subject, expressed a belief that a retrograde catheterism was the proper course to pursue in cases of impassable stricture, or rupture of the urethra, in which the posterior end of the urethra could not be found after making the incision in the perinæum.

Retrograde catheterism was not of frequent necessity, but the successful termination of several operations of this kind that he had witnessed, and the experience that he had had with the case, led to the inference that the surgeon should not hesitate to resort to this procedure if inordinate difficulty was experienced in finding the distal end of the urethra.

The patient had been a laborer, thirty-six years of age. While standing on a ladder he had slipped and fallen a distance of some ten feet, lighting astride of a fence, and violently striking the perinæum. He had been picked up unconscious, which condition had lasted a short time. The perinæum, the scrotum, and the thighs had been much swollen and discolored. Any attempt to void his urine had been attended with great pain; at the same time he had passed a large quantity of blood. An effort had been made to pass a catheter without success, and he had been advised to enter a hospital for operation. This he had refused to do. The following morning the swelling had been enormously increased, and had extended to the penis and abdomen. There had been complete retention of urine, the bladder reaching to the region of the umbilicus. Frequent attempts had been made to draw off the urine without success. Late in the afternoon the patient had consented to an operation, and forty-eight hours after the injury he had been brought to the hospital.

The modification of the Wheelhouse staff had been passed as far as the membranous portion of the urethra, and although the urethral canal had been very deeply seated, in consequence of the perinæum being enormously swollen, no difficulty had been experienced in opening the passage.

The hæmorrhage had been very profuse; the bleeding coming from all portions of the wound. It had been, however, controlled by means of hot water and the use of a number of hæmostatic forceps, which had been allowed to remain in position for two days. After the wound had been rendered dry, a persistent search had been made for the distal end of the urethra, without success. As the patient had been in a very critical condition, and as the operation had already been somewhat prolonged, it was decided that it would be safer to perform retrograde catheterism at once rather than to lose more time looking for the concealed end of the urethra.

Suprapubic cystotomy had been performed without difficulty; the bladder having been distended to its utmost capacity. The first incision through the skin had allowed the escape of a large quantity of urine which had extravasated through the ruptured urethra into the perinæum. After penetrating the bladder and allowing the urine to escape, an attempt had been made to pass a catheter into the vesical orifice of the urethra; the emptying of the viscus had allowed it to sink very deeply in the pelvis, and it had only been through the aid of an assistant, who had inserted a finger into the rectum and pushed the base of the bladder upward, that the urethral opening could be reached. A silver catheter had then been inserted, carried through the prostatic urethra and for a short distance into the membranous portion of the canal, where its onward progress had been arrested. On examination of the perineal wound it had been found that the distal extremity had turned on itself, and had become wedged into the surrounding crushed tissues. This condition had undoubtedly been brought about by the attempts made at catheterization before the operation.

The action of the catheter had forced the end of the canal tightly down into the surrounding structures, much as a ramrod presses down a load of shot into a gun-barrel. The condition of affairs had been such as to render it absolutely certain that had not a retrograde catheterism been performed the end of the urethra would not have been discovered.

After opening the membranous portion of the urethra in the manner described, free incisions had been made into the penis, the scrotum, the thighs, and the gluteal region, permitting the escape of large quantities of urine which had extravasated into those structures.

When the operation had been completed it had been found that the bleeding from the perineal wound had been not only very free, but that it had been impossible to control it without packing the part very firmly with iodoform gauze. This had precluded the insertion of a catheter, so that a large size drainage-tube had been placed in the bladder, through the suprapubic opening, and a few stitches inserted.

The shock to the patient had been great, but he had soon rallied; at the end of two weeks he had again been etherized and the continuity of the urethra, which had become blocked by the packing, had been established.

The opening of the urethra could not be found through the perineal wound. The suprapubic incision had been rapidly dilated, and, recollecting the difficulty experienced in reaching the urethral orifice of the bladder on the previous occasion, a rectal bag had been inserted, and then filled with ten ounces of water, which had lifted the base of the bladder up to within easy reach of the finger. On passing a silver catheter toward the membranous portion of the urethra through the urethral opening of the bladder, it had been discovered that the part had become completely occluded by the deposit of granulation tissue, which had accounted for it not having been discovered in the perineal wound. The urethra had been liberated by a simple cut of the knife, when the end of the catheter had protruded into the incision in the perinæum.

The catheter had been employed to guide a Teal gorget into the bladder, and after removing the catheter from the bladder a full-sized silver instrument had been passed from the meatus into the viscus; the gorget had served to guide it into place.

The gorget having been removed, the catheter had been tied in position and allowed to remain in place until both the suprapubic and perineal wounds had healed, which had required about four weeks. At the end of seven weeks from the date of his admission the patient had left the hospital perfectly cured.

A careful analysis of this case, said Dr. Horwitz, would seem to justify the following conclusions: Where an impassable stricture was present, especially if we were warranted in suspecting the existence of diseased kidneys, or in cases of rupture of the urethra, with indications of perineal section, should there be any difficulty in finding the distal end of the urethra, rather than prolong the operation, it was safer to perform retrograde catheterism with as little delay as practicable.

In cases of retention of urine, where the bladder was distended and suprapubic cystotomy became necessary, the operation was very simple and required but a few minutes for its accomplishment, and little time need be lost in resorting to retrograde catheterism.

Should the bladder be emptied, or contain but a small quantity of urine, the procedure was more difficult and a longer time was needed. The patient should be placed in the Trendelenburg position. Great care was to be observed not to injure the peritonæum, which, in this condition, lay directly over the viscus; by taking the pubic bone as a guide and going directly downward the bladder could easily be found and the serous membrane covering it could readily be pushed out of the way by means of the forefinger or the Allis dry dissector.

When the urine had escaped from the bladder and it was desirable to pass a catheter through the vesical orifice of the urethra the operation was facilitated by first distending the rectum by means of the rectal bag.

External perineal urethrotomy without a guide, when there was an impassable stricture or a ruptured urethra, was far from a simple operation; a good, steady, strong light and infinite patience were needed to insure success.

Time was saved and the operation much simplified by using the modified perineal staff of Horwitz.

Much valuable time was often lost by the attempts of the operator to ligate bleeding vessels, which lay in the deeper-seated portions of the wound, imbedded in cicatricial tissue. In a number of the operations of the kind that had been recently performed no effort had been made to ligate these deep vessels. Hæmostatic forceps had been applied and allowed to remain *in situ* for from twenty-four to forty-eight hours. By resorting to this method of procedure no difficulty had been experienced and the operation had been completed in half the time otherwise required. We had frequently allowed from six to eight forceps to remain in a wound at one time.

We could not too strongly urge upon the profession, he said, that the cause of failure to give permanent relief in many cases of external urethrotomy was owing to the fact that many operators allowed the catheter to be removed on the fourth or fifth day, so that by the time the individual was ready to leave the institution the urethra, which just after the operation would have tolerated a full-sized instrument, had contracted to such a degree that only a very small bougie could be introduced, inserted with difficulty, and giving rise to a great deal of pain. After leaving the hospital patients usually neglected to have an instrument passed regularly, and in the course of twelve months the stricture would contract to such a degree that more frequently than otherwise the operation had to be repeated.

In the last seventeen cases in which there had been operations a full-sized catheter had been inserted, tied in place, and allowed to remain in position until the perineal wound had been healed, which had usually required a period of from four to six weeks. The instrument must have a rubber tube attached to it, to be carried to a vessel underneath the bedstead, so that the patient and the bedclothes might be kept dry.

The catheter and urethra were to be daily irrigated with a warm solution of boric acid, in the proportion of ten grains of the acid to the ounce of water.

The number of patients that had been successfully treated by this method, said Dr. Horwitz, warranted the conclusion that the suggestion was valuable to the practitioner, and in commending it to the profession we were recommending a means of substituting for a diseased or contracted urethra one of full calibre; for, if the catheter was allowed to remain in position until the wound was closed, not only was the patient dry and comfortable, but a new urethra formed around the instrument, which, when removed, might be replaced by a full-sized bougie, which could be passed with ease. This the patient should continue to use, at first as frequently as twice a week, later on once a week, and finally once a month, and to be continued during his lifetime if he wished to avoid future trouble.

(*To be continued.*)

AMERICAN NEUROLOGICAL ASSOCIATION.

Twenty-first Annual Meeting, held in Boston, on Wednesday, Thursday, and Friday, June 5, 6, and 7, 1895.

The President, Dr. Philip Coombs Knapp, of Boston, in the Chair.

The President's Address.—The President thanked the members for the honor conferred upon him, extended to them a welcome to Boston on the occasion of their first visit to the city, and offered them greetings from various honorary members abroad.

The association, he said, was organized twenty years ago, with a membership of thirty-five. At that time the idea of such a society was something of an experiment, as few similar societies existed in the world. The society, however, had been successful, it had increased until there were now eighty-five members, and the meetings had always been profitable and interesting. It was not a society limited exclusively to specialists, as all who were interested in the diseases of the nervous system had been welcomed to its ranks.

The scientific work done by the members of the society was briefly reviewed. The chief work done in this country, with reference to diseases of the mind and nervous system, had been done by members of this association. In regard to investigations in the anatomy and physiology of the nervous system, the work done in this country was still below that done abroad, and endowments for such research were considered desirable. The work done in the study of disease and its manifestations and in the treatment of nervous diseases had been much greater. American neurologists had done very much to advance our knowledge of the treatment of disease of the nervous system, and no discovery in the last twenty years had been of as much importance as that of the rest cure by one of the members of the society, Dr. S. Weir Mitchell, of Philadelphia.

Some of the needs for work in the future were then pointed out; among them were the need of a journal, under the control of the society, greater recognition in our large hospitals, and a greater knowledge of nervous diseases by the physician in general practice. The greatest hope for the future in the treatment of nervous diseases lay in prevention. Many of the most serious affections were secondary to infectious diseases, and therefore with greater knowledge in the prevention and treatment of these diseases would come a diminution in the amount of nervous diseases due to them. In view of the many cases where people acquired nervous diseases on account of a defective nervous organization, it was considered advisable to put such people under a definite prescribed existence. There were many conditions of life which did no harm to the healthy man, but against which such persons should be protected. These persons should also be protected from the mental contamination of neurotic and degenerate influences, whether in morals, religion, art, literature, or sociology.

There had been much alleged concerning a vast increase in nervous diseases at the present time, but it did not seem probable that the conditions of life to-day were more exacting than those of life in the past, and, with better food, more rational standards of living, and greater security for life and property, it seemed not improbable that there was an actual diminution in the amount of nervous disease.

Election of Members.—The following-named gentlemen were elected to active membership: Dr. Hugh F. Patrick, of Chicago; Dr. Edward Wyllys Taylor, of Boston; Dr. Leopold Stieglitz, of New York; Dr. John Jenks Thomas, of Boston; Dr. H. L. Worcester, of Danvers, Mass., and Dr. B. Onuf, of Brooklyn; *Honorary Members:* Dr. S. Weir Mitchell, of Philadelphia; Dr. Camillo Golgi, of Italy; Dr. L. Edinger, of Frankfort; Dr. Ramon y Cajal, of Barcelona, and Dr. Déjérine, of Paris.

Election of Officers.—The following officers were elected for the ensuing year: President, Dr. F. X. Dercum, of Philadelphia; vice-presidents, Dr. George J. Preston, of Baltimore, and Dr. C. E. Riggs, of St. Paul; secretary and treasurer, Dr. G. M. Hammond, of New York.

Hysterical Amblyopia and Amaurosis.—Dr. J. Arthur Booth, of New York, reported four cases of these affections successfully treated by hypnotism.

Dr. F. X. Dercum, of Philadelphia, thought it of interest to note that perception of light was normal in these cases. In his experience, reversal of the color field was not common, and did not occur so often as had been supposed.

Dr. Morton Prince, of Boston, asked if the patients' vision had been tested during the hypnotic state. In his opinion, the theory of a shutting off of consciousness during hypnosis was a correct one. In many of these cases binocular vision was preserved, as proved by prism and stereoscope.

Dr. G. L. Walton, of Boston, said that experiments seemed to point to the conclusion that these patients really did see. The tests, however, did not prove that they were not simulating.

Dr. Booth replied that all his patients had been tested for binocular vision, but it had been found absent. There had been no occasion to simulate.

Complete Hysterical Anæsthesia in the Male.—Dr. Preston, of Baltimore, read a paper with this title. The case related was that of a man aged thirty-one years. His family and personal history were unimportant. The man was a moderate drinker, and during a spree got into a fight, but received no injuries other than some slight bruises. A day or two after his admission into the hospital a small patch of anæsthesia of the scalp developed. A few days later, general anæsthesia appeared. There was complete loss of the tactile and pain senses as well as of the temperature sense. The muscular sense was greatly impaired, but not entirely lost. Taste and smell were lost, and hearing was impaired. There was great constriction of the visual fields and the color fields were reversed. The reflexes, superficial and deep, were normal, and so was the electrical reaction. The patient gradually improved and finally recovered under hypnotic suggestion. Total anæsthesia was a comparatively rare condition, if the cases of transient loss of sensation were omitted. Stress was laid upon the importance and reliability of careful examination of the visual fields.

Dr. George W. Jacoby, of New York, thought that cases of total hysterical anæsthesia were not rare. They were most frequently found in cases of insanity. He referred to the case of a young girl in whom he had endeavored to determine the presence of ataxia, but it had not been demonstrable. In the patients that he had observed there had also been painful points on deep pressure.

Dr. Walton considered it unsafe to depend upon the constancy of tests as establishing genuineness in cases of supposed hysteria. A clever simulant might pretend to an anæsthetic boundary sufficiently constant to fall within the limits of genuine variation.

Dr. W. M. Leszynsky, of New York, said that with proper precautions during the examination, and with our present methods of investigation faithfully and persistently carried out, it was impossible for the cleverest patient, even an accomplished ophthalmologist, to successfully simulate defective visual fields.

Dr. J. J. Putnam, of Boston, believed that persons in apparent health were hysterical to a certain degree. The diagnosis must be made from the general aspect of the case, and not from any single symptom.

Dr. W. A. Jones, of Minneapolis, asked if there had been any immobility of the eyeball in Dr. Preston's case.

Dr. J. Madison Taylor, of Philadelphia, asked if there had been any difficulty in locomotion, more particularly under excitement.

Dr. Preston replied that there had been neither immobility of the eyeball nor difficulty in locomotion. The muscular sense had been preserved and there had been no ataxia. He had observed total anæsthesia in one case of insanity. He thought we were too likely to neglect a careful study of the central organism while devoting so much time to the periphery.

Railway Spine.—This was the title of a paper by Dr. F. X. Dercum, of Philadelphia. He reported two cases with autopsies. In the first case there had been excessive sprain of the muscles of the back and of the trunk generally, with marked spasm of the muscles and tremor, together with increased reflex excitability of the muscles and tendons. In addition, the symptoms so commonly observed in traumatic neurasthenia had been typical—namely, disturbed sleep, startling dreams, sudden awakening with fright, excessive sweating, frequent micturition, occipital headache, tinnitus aurium, marked general weakness, etc. The patient had died from some intercurrent disease. Careful examination of the nervous system had shown no demonstrable lesion. In the second case there had been severe traumatic left brachial neuritis and left brachial monoplegia, with atrophy of the muscles about the left shoulder, severe sprain of the muscles of the back, right hemi-analgesia extending from the foot up to the level of the nipple, and right hemi-thermo-anæsthesia extending from the foot up to the level of the false ribs. The man had been exceedingly weak physically, but mentally he had seemed clear and had accepted his situation in a philosophical spirit. He had died suddenly from the rupture of an aortic aneurysm. The post-mortem examination of the nervous system had proved negative.

Dr. Joseph Collins, of New York, said that, although the autopsy and subsequent histological investigation had not resulted in unraveling the mystery of the real basis of the traumatic neuroses, the cases were instructive because of the negative findings. He was in the fullest accord with Dr. Dercum as to the futility of attempting to demonstrate the organic basis of these diseases by means of the old methods of investigation, more particularly by any such as required hardening in Müller's fluid for the preparation of specimens. In the first place, this procedure allowed of no cellular stain except with carmin, and this was so inferior to the Nissl stain that there should be no reason for using it; and in the second place, even if it were a good one, the changes that went on in the structures which it stained, from lying for several months in a watery fluid, were such as to negative any conclusions that might be drawn from possible findings.

In one of Dr. Dercum's cases the ponto-bulbar symptoms had been so pronounced, the facial twitchings, the hemiatrophy, the sensory disturbance, that it was extremely likely that some anatomical change had been at the bottom of it. It seemed to him, moreover, that the presence of the large aneurysm, which in all probability had been of traumatic origin, would indicate that the changes in these cases were primarily vascular.

Dr. Charles K. Mills, of Philadelphia, looked upon these negative results as being very valuable. The microscopical examination should, however, have included that of the dorsal spinal ganglia.

Dr. Prince said the paper contained a direct proof of the theory of the traumatic neuroses. These patients suffered from psychical shock and physical shock. He agreed with Dr. Collins as to the method of study of nerve tissues.

Dr. Edward D. Fisher, of New York, reported two similar cases still under observation. He believed there must be some pathological changes to account for the symptoms in many of these cases.

Dr. Smith Baker, of Utica, N. Y., expressed the opinion that at the time of the accident there was a psychical copy formed which perpetuated this as a series of mimicry. A fixation of attention resulted, and might bring about changes in the higher cortical centres.

Dr. L. C. Gray, of New York, thought that the nature of these cases was still very puzzling. The term hysteria was objectionable. These railway subjects were, however, not hysterical.

Dr. F. F. Miles, of Baltimore, said we should cease to record diseases as functional. The protoplasm of the neuron was altered in its activities by shock. Protoplasm had a tenacious memory (as we saw when we had once taught it to make antitoxines) and might repeat an abnormal process until it was fixed by material change. The mystery was as to why this took place in some cases of shock and not in others, and as to why this memory was perpetuated in the cell.

Dr. Dercum said he fully realized the imperfection of the method adopted in preparing the specimens, but this had been due to unavoidable circumstances in connection with the autopsy and not from lack of familiarity with the newer methods.

Dr. M. Allen Starr, of New York, then gave a lantern exhibition of photomicrographs of nervous tissues with Golgi stains. This was followed by a lantern exhibition of the medulla oblongata of a chimpanzee and other specimens by Dr. Edward Wyllys Taylor, of Boston.

Exhibition of the Brain of a Chimpanzee.—Dr. Thomas Dwight, of Boston, spoke of the brain of the chimpanzee "Jumbo," and discussed chiefly the anterior limb of the fissure of Sylvius. On the left side this was distinct, ending in a bifurcation beneath a rudimentary pars triangularis. On the right side it was represented by a minute depression not connected with the fissure.

Inhibition in the Physiology of Respiration.—Dr. William Townsend Porter, of Boston, said that it was known that transverse division of the spinal cord between the bulb and the phrenic nuclei caused fatal arrest of the respiratory movements of the trunk. If death was prevented for a time by artificial respiration, the reflex powers of the cord gradually increased, and in the course of a few hours they might become so great that pinching the paws, blowing on the skin, suspending the artificial respiration, etc., might cause extended muscular contractions, including contraction of the respiratory muscles.

It had been said that these contractions of the respiratory muscles after the separation of the cord from the bulb were proof that the respiratory impulse for muscles of the trunk was not derived from respiratory cells in the bulb, but originated in the spinal cord. Against this hypothesis of spinal respiration was urged the fatal arrest of the respiration of the trunk caused by separating the bulb from the cord. It had been replied that section of the cord stimulated inhibitory fibres in the cord, and thus suspended the action of the spinal respiratory cells.

The doctrine of prolonged inhibition of spinal respiration was easily overthrown by the following experiment: Hemisection of the cord usually arrested the contractions of the diaphragm on the side of the hemisection. This arrest was not an inhibition, for the diaphragm on the side of the hemisection began at once to contract when the opposite phrenic nerve was cut. It followed that two hemisections, completely separating the cord from the bulb, did not inhibit the diaphragmatic respiration on their respective sides. The phrenic cells often sent out no respiratory impulses after such a section, because they received none from the bulb. The phrenic cells could not themselves originate respiratory impulses. Hence the respiratory impulse did not arise in the spinal cord.

The Pulse in Insanity.—Dr. Theodore H. Kellogg, of New York, read a paper with this title. It was based on the study of 2,172 cases of insanity, and was accompanied with tables and diagrams. The sphygmograms taken from among his patients on enamel paper had been transferred by photographic process and were mounted on photographic cards. The general conclusion arrived at was that there was, in established cases of insanity, considerable increase in the average frequency of the pulse, both among men and among women. The average obtained from the 2,172 cases was 84·8 in the women and 80·8 in the men, giving a general average of 82·8 in the total number of patients studied. There was irregularity of the heart's action in five per cent., intermittence in two per cent., and heart murmurs and heart lesions in eight per cent.

The various forms of sphygmographic tracings found in the different forms of insanity were discussed at some length. The general result of the sphygmographic studies was that abnormal tracings were to be found at some stage of the disease in the vast majority of cases of insanity. They were due to affections of the cortical and spinal motor and vaso-motor centres, to various lesions of the sympathetic, to disorders of the pneumogastric, to peripheral and central vascular changes, to degenerations of central organs, to toxic agents in the blood, to autointoxications, to cachectic and diathetic conditions, to cardiac lesions, and to a great variety of intercurrent causes.

No one sphygmogram was pathognomonic of any particular form of insanity, but there were certain general types of tracing which were found in one form of mental disease and not in another.

Localization of Lesions in the Pons.—Dr. Charles K. Mills, of Philadelphia, read a paper upon this subject. He first presented a record of a case, with an account of the autopsy, and drawings of microscopical sections. This patient had been a man, fifty-three years old, with a syphilitic history. His intracranial symptoms had come on about eight months before his death, the first being paralysis of the left abducens nerve. He had had attacks of weakness and dizziness. He showed on examination paresis of the left leg and arm, paralysis of the left external rectus, and paresis of the right external rectus, with some restriction of ocular movements to the left. The patient had been extremely emotional, tending to break into laughing and crying without special incentive. No areas of anæsthesia had been discovered. The knee-jerk had been exaggerated on the left side. Examination of the pons and præoblongata had revealed a lesion beginning about fifteen millimetres caudad to the junction of the pons and crus. It was on the left side close to the median line, and almost entirely in the dorsal half of the pons. Sections through the lesion had shown softened and degenerated tissue on both sides of the median line, much more marked on the left. As shown by microscopical examination, the parts involved in the lesion had been the right mesal fillet and pyramidal tracts to a slight degree and the root fibres of the abducens. In connection with this case, remarks were made on the method of localizing small gross lesions in the pons. This method was founded upon a number of cases most of which have been published. The author divided each half of the pons and præoblongata into nine segments—three ventral, three dorsal, and three intermediate between the ventral and dorsal. Drawings were shown which were based upon actual sections of specimens. The parts played by the cranial nerves, by the superficial and deep transverse fibres, by the pyramidal tract, by the fillet, by the systems of root fibres, and by the nuclei of the cranial nerves and the special pontile nuclei in this method of local diagnosis were shown.

(*To be continued.*)

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of June 5, 1895.

The Vice-President, Dr. Parker Syms, in the Chair.

A Bean in a Bronchus.—Dr. George D. Stewart presented a boy operated upon in Bellevue Hospital on April 15, 1890. On the morning of that day a bean had become lodged in his trachea. At the time of his admission, soon after the accident, the boy had been extremely cyanosed, the respirations had been very slow, and inspiration accompanied by a hoarse cry. Immediate tracheotomy had been performed, and an attempt made to grasp the foreign body with a tracheal forceps. Having failed in this, the incision had been continued farther down, and because of the aggravation of symptoms which had followed every attempt to use the tracheal forceps a small catheter had been inserted deeply into the trachea in the hope that it would pass the irregular-shaped obstructing body. Oxygen gas had then been allowed to escape near the end of the catheter. Under this treatment the cyanosis had lessened and the respirations improved. Finally, with a tracheal forceps the bean had been removed from the right bronchus. A tracheotomy tube had then been inserted, and the patient treated in the usual way. The tube had been used for fear of undue swelling or possible infection. It had been removed in three days, and the case had gone on well from that time.

Hernia and Undescended Testicle.—Dr. Stewart also presented a boy upon whom he had operated last summer for the cure of a hernia. The boy had been treated in a dispensary for two years. A truss had been so applied as to press the testicle back into the inguinal canal. The testicle had become swollen and tender. Dr. Dennis, who had then seen the case, had begun manipulations and the use of a truss so adjusted as to exert pressure on the testicle in a downward direction. The use of the truss had been discontinued after six years, and a congenital hernia had then been found. The speaker said that he had operated upon the boy by the Bassini method for the relief of the hernia, and had also passed a suture through the testicle and fastened it to the bottom of the scrotum. The testicle at present was out of the inguinal canal and about at the level of the external ring, and it was obvious that it could not return to the inguinal canal. The suture which had anchored the testicle to the scrotum had caused a great deal of discomfort until its removal. The boy had been extremely anxious to have the testicle saved, otherwise he would probably have removed it.

Compound, Comminuted Fracture of the Tibia and Fibula.—Dr. Frank Hollister presented a gentleman who had received an injury by missing a step in walking down a three-step stoop of a private residence. After missing the step, he had sat directly down, and had been found in that position, holding the limb.

Examination had shown the tibia to be fractured in the lower third, and a detached fragment about an inch and a half long with the upper end of the fragment protruding through the skin. The fibula had been extensively comminuted. Considerable swelling had followed.

Dr. Abbe had seen the patient in consultation. The patient being etherized, the fracture had been reduced by the employment of considerable traction and manipulation of the seat of fracture. The limb had been placed in a plaster-of-Paris cast. After ten days the patient had been again etherized, and examination had shown fairly firm union. The limb had then again been placed in a plaster-of-Paris cast.

After ten weeks a starch dressing had been applied and left on for six weeks. He was now wearing a silk stocking with a boot reaching high up on the leg. Five years before this patient had had a fracture in the lower third of the other leg from a similar slight cause.

The case was presented to illustrate what extensive bone injury could be produced from indirect violence without any constitutional taint to account for it.

Dr. John W. S. Gouley said he had been reminded by Dr. Stewart's remarks on the first case of a similar one he had seen many years before. A boy of about the same age, while chewing a raw turnip, had suddenly become cyanosed. Tracheotomy had been promptly performed, but the foreign body had not been found. It had occurred to him then to tickle the mucous membrane of the trachea with a feather, and so excite a violent cough. This had resulted in causing the foreign body to present at the orifice, where it had quickly been seized and removed. It was of the size of a child's canine tooth. Whether it had lodged in the trachea or in one of the bronchi had not been determined. No tracheal tube had been inserted, and the patient had recovered rapidly.

The second case presented by Dr. Stewart was also of great interest, and was an excellent illustration of the Bassini operation. He had doubts of the ultimate success of anchoring of the testicle to the bottom of the scrotum in cases of inguinal ectopia, because the spermatic cord was generally so short in these cases that this anchoring was not only attended with much difficulty in performance, but apt to cause almost intolerable pain from the necessary traction upon the cord, as had been so well illustrated in the case related by Dr. Stewart.

Dr. W. Evelyn Porter said that he recalled very vividly the first case presented, as he had seen the patient in the hospital. He felt that it was only the prompt action of Dr. Stewart and the use of oxygen that had saved the patient.

He had seen a very similar case of fracture to that presented by Dr. Hollister. It was a compound fracture of both bones without comminution. The patient had jumped off a cable car, without slipping or falling, yet he had sustained this fracture, The ease with which the bones had been broken was very remarkable. There was in his case no history of syphilis or of previous bone disease.

Dr. Irving S. Haynes said that he had under observation a case in which the testicle easily descended through the external abdominal ring, but came no farther. About two weeks ago, while dissecting a young male subject, he had found a partially descended testicle with the long axis parallel to Poupart's ligament, and a little below it. The firmness of its surrounding attachment and the short cord had impressed upon him the fact that there was but little probability of bringing down such a testicle by operation.

Dr. William J. Chandler, of South Orange, N. J., said he had been reminded by the first case of one in which he had performed tracheotomy on a young child who had swallowed a piece of a chestnut. He had not found the foreign body, but during the night, the wound having been left open, the foreign body had been coughed out. He had at one time seen a child alleged to have whooping-cough, but examination had shown that the spasmodic cough had probably been caused by a foreign body in the air-passages. Several physicians had seen this patient. Tracheotomy had been performed, and she had been carefully examined with the laryngoscope without the foreign body having been discovered. She had been, however, very much improved by the tracheotomy. About two weeks after she had left the hospital she had coughed up nearly half a prune pit, and since then had had no return of the cough.

Appendicitis with Ulceration; Late Operation; Death on the Operating Table; Autopsy.—Dr. Chandler presented a specimen from a case of appendicitis. The patient, Augustus L., sixty-seven years of age, a German laborer, of very fleshy habit, had been admitted to his service at the Memorial Hospital, Orange, on May 28, 1895. The man had stated that on the evening of May 25th, after a day's work, he had been seized with colicky pains in the abdomen. These pains had continued ever since, rather more on the right side than elsewhere. On the first evening he had had a small fæcal movement, but none since that time. His only treatment had been with hot applications and a dose of castor oil on the night before his admission. Examination had shown a pulse of 90, irregular and intermittent; respirations, 34; temperature, 98·4° F. He had complained of some pain in his bowels, and there had been at this time some tenderness in both iliac regions, with tympanitic distention of the abdomen. The distention had been rather more marked over the right side, and here there had been also more resistance to pressure. The urine had contained a trace of albumin. He had been ordered half a grain of calomel every half hour and enemata every two hours. After two hours he had begun to vomit. By nine o'clock in the evening he had vomited several times, and all the enemata had been returned without producing a fæcal discharge. The enemata had been given through a long rectal tube. The vomited matter was a greenish-yellow fluid of the consistence of pea soup and had an odor of fresh blood. An exploratory laparotomy had been advised, but had been stoutly refused. At 9 a. m. the next day the general condition had been about the same; pulse, 88; respirations, 28; temperature, 98·2°. He had vomited six times during the night, but expressed himself as feeling much better—*i. e.*, quite free from pain, except considerable tenderness over McBurney's point. There was none elsewhere in the abdomen. The continued vomiting, obstinate constipation, and local tenderness had pointed so decidedly to the need of surgical relief that he had been strongly urged to permit an operation, but he had very obstinately refused. The vomiting had become more frequent during the night; his temperature had fallen to 97·4°; his skin had been bathed in a cold, clammy perspiration; his pulse had lost force, and his face had assumed the anxious look so common and so expressive in these cases. The next afternoon some of his friends had persuaded him to ask for an operation, and, although his condition had been so unfavorable, it had been decided to make an exploration. He had previously been prepared for laparotomy, and in about twenty minutes he had been under ether and on the operating table. The incision had been made in the median line. The intestines had been found distended, reddened, and somewhat coated with lymph, but no constriction could be felt. The fingers had been inserted far enough to determine the existence of inflammatory trouble around the appendix, and the operator had been about to enlarge the incision and ascertain the exact condition, when a sudden gush of fluid from the stomach flooded up and out of the mouth and nostrils; breathing had ceased, the face had become cyanosed, and almost simultaneously the heart had ceased to beat. The usual means of resuscitation had been employed—the patient had been suspended by the feet, artificial respiration induced, tracheotomy performed, stimulation applied to the heart by alternating hot and cold compresses—but all to no avail, for, although the air had passed readily in and out of the tracheal opening, the heart had not resumed its pulsation. After twenty minutes, all efforts at resuscitation had been abandoned.

The autopsy had been made four hours later. The heart had been normal in all respects, but empty; the lungs slightly congested, with many old pleural adhesions; liver and spleen normal; kidneys fatty. No foreign material had been found in the larynx, trachea, or larger bronchi. The small intestine had been found congested and distended throughout nearly its whole length. The omentum had been found heavy with fat, crowded *en masse* over to the right side, and bound down upon the upper part of the cæcum so as to compress it somewhat. The cæcum, the appendix, and the lower part of the small intestine had been found glued together by bands of lymph, and in the interstices there had been seen collections of purulent-looking serum. The appendix had been ulcerated through, but covered in by adhesions which, when torn through, had allowed of the escape of a piece of fæcal matter of the size of a bean, and of a bit of cheesy mucus a little smaller. There had been no communication between the cæcum and the appendix, the site of the original opening being closed by a dense layer, apparently of lymph.

The interesting points in the case were: 1. The absence of any communication between the cæcum and the appendix. 2. The short period of time probably occupied in sealing this opening. 3. The pulse and temperature being but slightly disturbed by the quite destructive inflammation of the appendix, accompanied by a pretty general peritonitis. 4. The question as to whether the death had been due to shock from the sudden stoppage of respiration in a man whose vital powers had already almost ebbed away, or to the anæsthetic. 5. The emphatic lesson so uniformly taught by all these cases—*operate early.*

Dr. F. H. Wiggin said that the fatality of delay in operating in such cases should be continually impressed upon the general profession. Recently he had been talking with another surgeon in New York, who had told him that his experience had been that ninety-five per cent. of all deaths occurring after abdominal operations were due to delay. The cause of death in the case reported seemed to him most probably the anæsthetic.

Dr. Stewart said that he had read of several cases in which the appendix had been shut off from the cæcum, and even where the appendix itself had been divided into several segments by obliteration of its lumen at several points.

Dr. John F. Erdman said that he had seen one case in which there had been a distinct and entirely impervious constriction an inch and a half beyond the cæcum.

Dr. Chandler said that the results of the autopsy in his case had corresponded very closely with those found in cases of death from ether, yet he knew of nothing about the management of the anæsthetic in this particular instance which would tend to confirm this view. In his opinion, the cause of death was still an open question. The tracheotomy had been completed within two minutes from the first indication of asphyxiation. Unfortunately, the brain and spinal cord had not been examined at the autopsy.

The Chairman said that in all cases of prolonged abdominal sepsis there was a peculiar condition of shock, and it seemed to him that this might very easily explain the sudden death.

Dr. Wiggin remarked that in his recent abdominal operations he had noticed that patients with abdominal sepsis had borne the anæsthetic very badly.

Dr. H. H. Seabrook said that there were two theories regarding heart paralysis—one that it was of peripheral, and the other that it was of central origin. The former theory, although the one generally accepted, was purely theoretical.

(To be concluded.)

Reports on the Progress of Medicine.

OTOLOGY.

By CHARLES STEDMAN BULL, A. M., M. D.

Researches into the Origins of the Auditory Nerve, its Branches, and its Ganglia.—Cannieu (*Rev. de laryngologie et d'otologie*, April 15, 1894) draws the following conclusions from his investigations: In adult mammifera, such as the cat and mouse, there is a bulbar prolongation which penetrates more or less deeply into the internal auditory canal and even sometimes into the columellar cavity of the cochlea as far as its last turn. This prolongation should be morphologically compared with those which form the optic nerve. From this prolongation rises the cochlear branch. The acoustic nerve is formed by two branches in mammals, independent the one of the other, but in man their union forms the main trunk.

The ganglia of Scarpa and of Boettcher, and that which Corti and Schwalbe recognize in the posterior ampullar nerve, form but a single ganglion which should be called the ganglion of the vestibule.

The posterior ampullar nerve and the nerve of the saccule are not branches of the cochlear nerve, but are given off from the ganglion of the vestibule. From this same structure in the mouse there arises a nerve which is distributed to the first half of the inferior spiral of the cochlea. In man and in the cat this nerve is represented by a few slender fasciculi.

In the mouse, the fibres of the acoustic are developed at the expense of the ganglia in the petrous bone, and in the specimens examined this nerve was not yet connected with the medullary substance. The auditory nerve and the facial, which in man and the higher mammals form the seventh and eighth pairs of cranial nerves, are united in the mouse, and should be compared with the motor and sensory fibres of a corresponding pair of cranial nerves, like the trifacial or the glossopharyngeal.

In the mouse, the nerve fasciculi which come from Scarpa's ganglion accompany the geniculate ganglion. These fasciculi should be regarded as morphologically equivalent to the intermediary nerve of Wrisberg. In the same animal there is still another band of ganglionic cells which run parallel to the above-mentioned fasciculi.

In their medullary course the fibres of the vestibular and cochlear nerves divide into two fasciculi, anterior and posterior, which may be compared with the ascending and descending roots of the posterior roots of the sensory spinal nerves. These roots do not end in the anterior nucleus, but on a level with the masses of gray matter beneath the floor of the fourth ventricle, where they end like the fibres of the posterior roots of the medulla; that is, the axis cylinders of the fibrillæ of which they are formed do not connect with Deiters's prolongations of the nerve cells, but terminate in a fine arborescence corresponding to the ramifications of these cells.

An Instrument for Hollowing out the Wall of the Logette and Opening the Attic.—Gellé (*Arch. internat. de laryng. et d'otol.*, January, February, 1894), in order to avoid fracturing the tegmen tympani in the operation of opening the attic with mallet and chisel, proposes to perforate the wall of the bony part of the auditory canal which conceals the top of the tympanic cavity, starting from the edge of the tympanic ring by means of a sort of pruning shears. The instrument consists of a tubulated stem ending in two bent hooks, which is introduced under the edge of the tympanic ring. The hooks catch on and hold the bony lamina firmly. Pressure by the hand approximates the two valves of the handle of the instrument, and pushes forward toward the bone a solid steel shank ending in a point of the size of a grain of barley. The bone, caught between the internal hooks and the external point, breaks into fragments which are retained in the hooks.

Aural Reflexes.—Bonnier (*Arch. internat. de laryngol. et d'otol.*, May, June, 1894) defines the term "aural reflexes," those reflexes of aural origin which come from centrifugal reaction. He divides them into *intrinsic* and *extrinsic*. The "intrinsic" reflexes may be classified into those of compensation, those of accommodation, and those of interception. The reflexes of *compensation* he subdivides into labyrinthine escapement, vaso-motor compensation, tympanic compensation, and tubo-tympanic compensation. The reflexes of *accommodation* he subdivides into accommodation for incidence, accommodation for intensity, and accommodation for the pitch.

The *extrinsic* aural reflexes he classifies according to the centripetal nature of their origin, as follows: 1. From the auricular nerve. 2. From the pneumogastric branch. 3. From the auriculo-temporal. 4. From the glosso-pharyngeal. 5. From the chorda tympani. 6. From the nerve of the utriculus. 7. From the nerve of the sacculus. 8. From the cochlear nerve.

Acoustic Neurasthenia.—Alderton (*Annals of Ophth. and Otol.*, October, 1894) states that patients affected with this disease complain principally of a hardness of hearing, varying from the common disorder of mere slowness of hearing to so great an impairment that the whisper is heard only close to the diseased ear. In the former the sounds are heard, but because of acoustic lassitude are not quickly combined, and the patients will often answer a question some moments after all hope of a response has disappeared. This slowness or hardness of hearing has existed for an interval varying from a few days to as many years, according to the duration of the causative conditions and the individual resistance. Tinnitus may or may not be present, and may be either occasional or constant. Pain is an occasional symptom, and may be either sharp and shooting, or of the dull, aching variety, and is never constant. Paræsthesiæ are apt to be very common. The membrana tympani and tympanum may be normal, or may show signs of some pre-existing or existing diseased condition. The general health is in some cases extremely good, and the other special senses may be well preserved. The treatment is the same as that for general neurasthenia.

Ear Faints and Epilepsy.—Hobby (*Annals of Ophth. and Otol*, October, 1894) considers that there are pecculiarities in the fainting of ear patients which distinguish the loss of consciousness from ordinary syncope. The patient, without warning, slides down in the chair, the eyes roll up, unconsciousness supervenes without pallor, a slight stiffening of the body follows, sometimes preceded by one or two slight contractions of the extremities; sometimes there is grating of the teeth, then a gentle sigh, a look of surprise, and the attack is past. The absence of pallor, of dilated pupils, and of nausea before and after, the presence of contractions, the rigidity, and the rapid recovery seem to indicate that the attack is of an epileptic character.

Investigations with Tuning Forks of Middle Register.—Alderton (*Arch. of Otol.*, xxiii, 3) draws the following conclusions from investigations made in more than six hundred cases: 1. Intensity or duration Rinné $BC > AC$ or $BC = AC$ always indicates some middle-ear disease, either alone or as a complication. 2. In any peripheral disease, sufficient to produce any degree of deafness, intensity Rinné $BC > AC$ or $BC = AC$ will be found to exist if a low enough fork be used in the testing, providing the internal ear is normal or nearly so. 3. The duration of B C is increased over the normal in affections of the sound-conducting apparatus, except for the highest notes; the explanation of this exception existing in the fact that the sound-conducting apparatus is not concerned in the transmission of high notes. 4. In affections of the sound-conducting apparatus, sounds of a low pitch are poorly heard by A C, while high-pitched sounds are relatively well perceived. 5. The higher up the scale of forks the intensity negative Rinné travels, the greater the degree of sound obstruction existing in the sound-conducting apparatus, as a rule. 6. The prolonged duration of B C in affections of the sound-conducting apparatus is due to a combination of the resonant effect of occlusion, to the exclusion of outside conflicting sounds, and to disturbed labyrinthine tension. 7. Any profound or prolonged middle ear affection ultimately affects the labyrinth secondarily. 8. If the duration of B C be curtailed to any extent, as compared with the normal or known abnormal, there is some internal ear disease, either alone or as a complication. 9. The comparative initial loudness of A C and B C and absolute duration tests when combined furnish much more valuable assistance than either the duration Rinné or Weber in the diagnosis of ear troubles. 10. It is not necessary, when the entire series of tuning forks is used, to put any arbitrary whisper limitation upon the reactions in determining the diagnosis. 11. It is possible to have a higher fork heard $BC > AC$ or $BC = AC$, either by intensity or duration, when the next lower fork is heard $AC > BC$. 12. The tuning-fork tests give no certain help in prognosis as to the degree of improvement that may be hoped for, except that when in affections of the sound-conducting apparatus intensity negative Rinné has climbed up to the C^{iv} fork, not much, as a rule, can be hoped for through treatment. 13. Duration of B C becomes almost or quite normal when normal conditions are restored. 14. The forks absolutely necessary to a diagnosis are the C fork, 32 to 64 v., or Dench's 26 to 64 v. clamped fork, and the C^{iii} fork, 1024 v.

The Average Hearing Power of the Aged.—Bezold (*Arch. of Otol.*, xxiii, 3) is of the opinion that in the decades following that from the fiftieth to the sixtieth year there is not only a successive decrease in the number of those with nearly normal hearing, but there is also a successive increase in the degree of the deafness. With the old people there is a marked difference between the sexes. The number of men who perceive whispering is relatively much larger than the number of women. It is chiefly a moderate grade of deafness which is produced by noisy occupations, detonations, etc. The female sex in old age also shows itself to be less resistant, at least toward those influences which cause a high grade of deafness. Obstruction of the Eustachian tube, which causes anomalies of form, is an affection especially of childhood. The different sequelæ of former inflammatory processes are found in a much greater number from the fiftieth year on. In age the middle-ear affections are less frequent as compared with inner-ear troubles. In old age bone conduction in itself does not experience a reduction, but sinks proportionately with the lessening of the hearing distance.

The Presbycusic Law.—Zwaardemaker (*Arch. of Otol.*, xxiii, 3) draws the following conclusions from his observations: 1. The compass of the human hearing contracts a half octave at its upper limit up to the period of advanced old age. 2. During advanced age proper the contraction of the scale increases. 3. The upper limit is in youth in e^7, in advanced age at a^6. As extreme, g^6 becomes the limit in normal-hearing old people. 4. A lower limit may be taken as a sign of pathological conditions.

Primary Disease of the Bony Labyrinthine Capsule.—Politzer (*Arch. of Otol.*, xxiii, 4) takes up the topic of a hitherto erroneously diagnosticated form of disease of the ear which, beginning with symptoms of a progressive loss of hearing, generally terminates in incurable deafness. Many of these cases must now be regarded as examples of a primary affection of the bony labyrinthine capsule, which results in a neoplastic bony tissue which gradually pushes aside the normal bone, closes entirely the oval window, and produces ankylosis of the stapes. Sometimes the neoplastic tissue extends toward the round window and cavity of the labyrinth. The chief characteristic of these cases is a constant and vehement tinnitus. In some the tinnitus ceases with the arrival of total deafness, while in others it persists without intermission. Pain is occasionally present. The proof that the disturbance of nutrition in the bone does not originate in the periosteal or mucous layer depends on the absence of any alterations in the mucous membrane of the middle ear, as well as on the circumstance that the most remarkable alterations in the bony tissue are not found near the mucous membrane, but in the deeper layers of the capsule itself. Most of these cases are met with in old people. All treatment must be regarded as hopeless.

Unilateral Diplacusis.—Gradenigo (*Arch. of Otol.*, xxiii, 4) defines uniaural diplacusis as that rare affection of hearing in which a double perception of a single tone is got by one ear alone. It is analogous to binaural harmonic diplacusis. The affected ear perceives not only the fundamental tone, but, particularly when the fundamental is not intense, one of the harmonics also, so that in the one ear there is a doubled and synchronous perception of sound. It depends probably upon anomalies of the conducting apparatus or peculiarities of tympanic resonance. He reports two cases.

The Symptomatology of Rhinitis Chronica Atrophica, with Special Reference to Affections of the Ears.—Morf (*Arch. of Otol.*, xxiii, 4) draws the following conclusions: Chronic atrophic nasal catarrh attacks young people chiefly. Disease of the middle and inner ear is a frequent complication. The middle ear is affected four times as often as the inner ear. Pathological alterations in the membrana tympani without deafness are rare. The sex has no influence on the frequency of the aural affection, but the right ear is oftener affected in women and the left ear in men. In about half the cases of aural complications both ears are attacked. Nervous deafness is relatively more frequent in atrophic rhinitis. The middle-ear disease is generally the consequence of disturbed tubal ventilation, and the affection of the inner ear must be referred to constitutional anomalies.

Double Hearing.—Daae (*Arch. of Otol.*, xxiii, 4) has arrived at the following results from his observations: 1. Double hearing may arise from affections of the sound-conducting apparatus. 2. It may arise from affections of the sound-perceiving apparatus. 3. Harmonic as well as discordant double hearing may depend partly on affections of the inner ear and partly on affections of the middle ear.

Hearing for Speech and Hearing for Tones in General, and the Measurement of the Latter by Gradenigo's Auditory Field.—Zwaardemaker (*Arch. of Otol.*, xxiii, 4) summarizes his remarks as follows:

If Gradenigo's auditory field is completed and constructed according to physical laws, it furnishes an absolute measure for the acuteness of hearing. It is only necessary to compare its area with the normal area at a like age in order to obtain a quantitative expression of the sensory acuteness in general.

For the construction of the auditory field, five observations will provisionally suffice: lower boundary tone, C, c^2, $f\sharp^4$, and upper boundary tone. Only in case tone-gaps are present will it be necessary to undertake measurements of a greater number of steps.

For certain scientific examinations a more exact estimate of the auditory field will be required. In this case the number of steps measured must be as great as possible. If it were practicable to establish a quantitative estimate for each tone of the chromatic scale, the size of the auditory field would give the absolute acuteness of hearing.

History of a Brain Tumor.—Moos (*Arch. of Otol.*, xxiii, 4) reports a very interesting case of brain tumor occurring in a man, aged twenty-one years. For about six weeks before Moos saw him his gait had been unsteady and he had been quite deaf, and there had been diplopia. There was left facial paralysis and total deafness for speech in the left ear. Tuning fork not heard in the left. No tinnitus. Middle ear normal. There was paralysis of the left abducens. Fundus of the left eye normal. Pronounced nystagmus in all directions. Cerebellar ataxia Sensibility of the left extremities good. Tendon reflexes in the left arm increased. In consideration of the cerebellar ataxia, paresis of the left facial and abducens, participation of the left trigeminus and acoustic, and slight weakness and increase of the tendon reflexes on the left side, a diagnosis was made of an affection of the cerebellum and medulla, probably a tumor. The deafness subsequently became total, vomiting occurred, and he died about a month later, consciousness being retained until the last. At the autopsy, the gyri of the cerebral convexity were found broad and flat, but with no other noticeable change. The upper surface of the cerebellum appeared equally unchanged, but on the lower surface a tumor was found, grayish-white in color, soft, and very œdematous. It involved the situation of the left crus of the pons and the adjoining section of the crura of the cerebrum. The tumor extended toward the cerebellum and medulla oblongata, as far as the interior of the left hemisphere of the cerebellum. In the medulla, the left pyramid was slightly atrophic. The lateral portions were replaced by the tumor. The left half of the fourth ventricle was marked only by a narrow, shallow depression. The tumor extended downward a centimetre and a half from the lower angle of the rhomboid fossa. At the base of the brain, the olfactory, optic, oculomotor, and trochlearis were wanting on both sides. On the left side, the trigeminus, abducens, auditory, and facial were in addition either wanting or involved in the mass of the tumor.

A microscopic examination of the tumor showed that the nucleus and protoplasm of the ganglion cells were decidedly granular and were undergoing fatty degeneration. The tumor was primarily a sarcoma made up of small round cells and spindle cells, having in places the character of a glio-sarcoma. Its origin is somewhat uncertain. Development either took place from the glia cells, or the tumor arose from the blood-vessels, or both. It sprang in all probability from the external portion of the left half of the pons, as one of the early symptoms was the staggering gait. A particularly noteworthy fact was the entire disappearance of the nuclei and root fibres of the abducens, facial and auditory nerves of the left side.

The tensor tympani muscle on the left side had undergone fatty and waxy degeneration. There was a small hæmorrhage in the left aquæductus cochleæ and there were evidences of stasis in the veins.

The facial nerve, shortly before its separation from the auditory, showed a destruction of its superficial layers by hæmorrhage. The hæmorrhagic destruction of the auditory nerve was more marked than that of the facial, and there were numerous large fresh hæmorrhages in the course of the nerve.

There was globular stasis of the vessels of the posterior semicircular canal, with two hæmorrhages on the outer wall. One portion of the anterior semicircular canal showed the endolymphatic space filled with connective and osteoid tissue, and the perilymphatic space with thick bands of connective tissue and large, tense vessels with thick walls, between which were numerous small hæmorrhages.

The Aural Ætiology of Certain Cases of Facial Paralysis said to be due to Cold.—Launois (*Ann. des mal. de l'oreille et du larynx*, November, 1894) draws the following conclusions from his observations: 1. Facial paralysis usually attributed to cold is frequently caused by a mild form of otitis media, which should be looked for. 2. This otitis is due to the propagation to the drum of an inflammation or a rhino-pharyngitis caused by cold. 3. The aural origin of facial paralysis accounts for a series of symptoms not otherwise easily explained, such as fever, general symptoms, pain in the ear, deafness, and painful hearing. 4. The prognostic significance of this ætiological fact is very great, for usually facial palsy of aural origin is readily cured.

Staphylococci and Otorrhœa.—Lermoyez and Helme (*Ann. des mal. de l'oreille et du larynx*, January, 1895) draw the following conclusions from their observations: 1. Most cases of acute otitis media are in the beginning monomicrobic, the pus containing usually but one species of microbe. 2. Streptococcus and pneumococcus are those most commonly found. The staphylococcus is rarely found at this period. 3. At the end of a certain varying interval a second infection is grafted on the primary infection and takes the latter place. 4. This second infection is the effect of the staphylococcus, usually of the white variety. 5. It determines the beginning of the chronic stage of inflammation. 6. These staphylococci may come from the nasal fossæ through the Eustachian tube, though they usually come from the external auditory canal and enter the drum through the perforation in the drum membrane. 7. They are often found in the cerumen of the external canal. 8. They are usually carried to the ear in dressings or applications which have not been made aseptic. 9. Hence the most extreme antiseptic precautions must be observed in the treatment of acute purulent otitis media. 10. There must be asepsis of the nasal fossæ and mouth, asepsis of the external auditory canal, and asepsis of all instruments and dressings used.

(*To be concluded.*)

Miscellany.

The Causes and Prevention of Spinal Curvature were the points chiefly dealt with by Mr. Noble Smith, F. R. C. S. Edin., in a paper on The Physical Culture of Youth, recently read before the Gloucestershire Branch of the British Medical Association (*Brit. Med. Jour.*, June 15th). In the course of the paper Mr. Smith said:

"The deformities in ligament and bones are not, as a rule, produced by the occasional indulgence by the patient in very unnatural and unsymmetrical positions, but by the long continuance of positions of body and limbs both at rest and during exercise, which are faulty to so slight an extent only that they are frequently overlooked or disregarded. The continuance, and not the extent, of the unnatural position is the determining factor in the result. In fact, in childhood no position, however unnatural, does harm, provided the indulgence in it be occasional and not continuous. Of the various factors which by their continuous application give rise to deformities, none are so potent and yet prove so unsuspected as clothing. Especially is this the case among girls. From a hygienic standpoint, ninety per cent. of modern clothing is faulty and even harmful.

"Nowadays people object to belts and garters, and the objection when made to such articles tightly applied is rational. But the result of the sensible objection to tight belts and garters has been a recoil to the other extreme, a discarding altogether of belts and garters, with the result that modern clothing is suspended entirely from the shoulders, and not only from the shoulders, which is bad enough, but from the extreme acromial ends, which makes matters worse. The hips, not the shoulders, should support the nether garments, a fact which every sailor and stableman knows from practical experience. Garters, if not overtight, are harmless even in childhood, and suspenders are only justifiable if supported from the hips. Tight garments across the chest, a fault in construction almost universal with children's clothing, must also be avoided.

"After clothing, the next most important factor is food. A constant source of juvenile debility, with its resultant changes in bone and ligament, is bad or insufficient food. The nitrogenous element especially is frequently deficient. The food is either insufficient in quantity, indifferent in quality, or badly cooked. All three conditions are very common in public schools, and yet no remedy is suggested, because of the mistaken idea that the complaints of schoolboys and schoolgirls against their food should never be listened to.

"The bony and ligamentous tissues thus weakened by imperfect feeding and displaced by irregular pressure, increasing in directions where the steady continuance of pressure should have prevented such increase, and remaining stationary from pressure which should not have existed, obviously must result in deformity; but a deformity of such insidious origin and of so slow a growth that it becomes evident only after years of progress. With these changes and alterations in the bones and ligaments there is necessarily concomitant muscle weakness, but a weakness easily remedied and of trifling importance to the patient compared with the other changes. Now the law which brought about so great a change by the continuity of action of a factor but slight in itself can be pressed into the service of the surgeon, and the result reversed by changing the factors but making them act in the same continuous way. Just as a deformity is effected by unnatural conditions and positions acting for a long time, so cure will be effected by natural conditions and positions being restored and retained through months and even years. From the consideration of this law it becomes self-evident that it is far more important to have prolonged rest in good positions than to have frequent (but necessarily occasional) drilling. By 'rest' he did not mean recumbency, but merely the avoidance of exercises that produce fatigue, such as, for instance, long walks. It is very wrong to enforce, even in the most healthy, long races and paper chases and any other exercises which cause severe prolonged strain to the heart. Such prolonged overexertion causes impaired nutrition, which necessarily results in atrophy and weakness. He had for years insisted upon the value of intermittent exercise such as games rather than continuous exercise such as long walks, and lately Dr. Lauder Brunton in his Harveian Oration has pointed out that the spontaneous exercise of a child was that of a butterfly, not of a bee. With the same object in view a colt was allowed to gambol and never put into harness while young.

"If children were only allowed to rest their backs when they sat down, as by leaning them against the back of a chair, there would (*cæteris paribus*) be few weak backs. It is very important that their spines, when not in action, should be kept in a natural symmetrical position; a position absolutely unattainable, for more than a very brief period, by muscular action alone. The effort to keep the spine straight when sitting on a seat with no back support is never effectual, and though the order to 'sit up' produces a temporary straightening of the spine, yet relaxation slowly but surely follows, and each reapplication of the stimulating word of command produces a less and less lasting effect."

Heavy Brains.—The *Lancet* for June 15th contains a short article by Dr. J. A. Campbell, medical superintendent of the Cumberland and Westmoreland Counties Asylum, in which, after referring to an article in the preceding number of the same journal, by Dr. Middlemass, who had cited various recorded brains of unusual weight, he goes on to say:

"It may be of interest to put on record the experience of Garland's Asylum. A post-mortem examination has been made in the case of each death (except two) which occurred here since January 1, 1867. The total deaths during that time have been 1,148 and the necropsies 1,146. A record of each examination has of course been kept, and the weights of the viscera recorded in a uniform and systematic manner. I have looked over the brain weights and in the following table show certain facts concerning the instances in which the brain weighed sixty ounces or above that weight:

No.	Date of necropsy.	Sex.	Age.	Mental condition.	Weight of brain in ounces.
1	Jan. 8, 1867.	M.	33	Epileptic mania.	62·50
2	Dec. 26, 1867.	M.	28	" "	62·25
3	Nov. 4, 1869.	M.	44	Mania	60·0
4	May 22, 1871.	M.	24	Epileptic dementia.	71·50
5	Nov. 3, 1873.	M.	38	General paralysis.	60·75
6	April 17, 1876.	M.	61	Mania.	60·50
7	Sept. 23, 1876.	M.	39	"	62·0
8	Dec. 16, 1881.	M.	38	Epileptic dementia.	60·50
9	Feb. 20, 1883.	M.	20	Dementia.	60·0
10	Mar. 18, 1883.	M.	71	Mania.	65·0
11	Oct. 5, 1883.	M.	41	Dementia.	62·0
12	April 9, 1885.	F.	65	Melancholia.	62·50
13	Jan. 28, 1887.	M.	55	Mania.	63·25
14	Dec. 18, 1891.	M.	37	Epileptic dementia.	62·50
15	July 15, 1893.	M.	36	Mania.	61·0

"I think that in the case of No. 4 the weight of the brain is so great that I give the measurements of the skull which were noted. The skull without the scalp measured $8\frac{1}{18}$ in. anteroposteriorly, 8 in. diagonally, and 6 in. in width, and across the frontal bone at the junction with the parietal $4\frac{3}{16}$ in. The following are points of interest: A third of the whole brains above sixty ounces were those of patients who had suffered from epilepsy, and though one at present hears so much of the increase of stature and general development of the female, yet only one female brain figures in the heavy list, though I have, and have had, females of gigantic proportions both as to length and breadth and of truly appalling weights. I may say that the population of Cumberland and Westmoreland is recognized as one of big stature, and the brains should be proportionately large. I should, however, like to see some statement as to the Aberdeen size and weight of brain. It is said that Aberdonians take an exceptionally large size of hat. I merely give my experience of weight; I do not touch on the other topics, such as mental power and its relation to the size of the brain."

Some Sequelæ of Typhoid Fever.—Dr. Thomas D. Dunn, of West Chester, Pa., read a paper with this title at the recent meeting of the Medical Society of the State of Pennsylvania. As it would be impossible, within the limits of a ten-minute paper, he said, to critically consider all the sequelæ of typhoid fever, his remarks would be confined to a few striking cases which had come under his personal observation.

He first gave short histories of three case of erythema nodosum as a sequela. Erythema nodosum was rare, he added, but probably commoner than statistics seemed to show. As he had seen no reference to it as a sequel of enteric fever, it was possible that their connection in his cases had been accidental. It was remarkable, however, that in an experience of only nine cases three should have followed typhoid fever. If the opinion advanced by Bohn, that each of these nodular tumors was an inflammatory infarction caused by embolism in the cutaneous vessels, was correct, the post-typhoid state was certainly a favorable condition for the development of erythema nodosum, and in children, at least, a predisposing cause.

Two cases of thrombosis and a case of abscesses in various parts of the body, with suppurative parotiditis, were then related, and Dr. Dunn remarked that Vincent (*Annales de l'Institut Pasteur*, Paris, February, 1894), out of forty-one cases of enteric fever, in which suppuration had appeared, had found the secondary lesions in thirty-two cases due to *Staphylococcus aureus* or the mixed infection from the *Staphylococcus aureus* and *albus*. All the patients had recovered.

In eight cases streptococci, in association with the typhoid bacillus of Eberth, had been isolated from the purulent forms. Five of these patients had died, and he considered complications very grave in which streptococci appeared, and when they were detected after enteric fever energetic treatment should be used. He suggested that attention should be given to the hygiene of the skin, in order to diminish the risk of such infection.

Five cases of nervous sequelæ were then mentioned. In this class of cases, said Dr. Dunn, the force of the disease seemed to be spent on the cerebro-spinal system, and was doubtless due to impaired nutrition and exhaustion of the nerve centres—the result of prolonged high temperature. This explanation would also account for the various forms of post-typhoid neuritis as well as for the neurosis known as the "typhoid spine," which had been so graphically described by Dr. Gibney, of New York, and Dr. Osler, of Baltimore.

The treatment of these cases consisted in the allowance of a highly nutritious and easily assimilated diet, in the administration of strychnine and iron tonics, and in the use of every measure possible to secure rest to the exhausted nerve centres. The modern hydropathic treatment of the febrile stage of typhoid would lessen the frequency as well as the severity of such complications by diminishing nerve exhaustion. Patients with post-typhoid melancholia and insanity usually recovered, and the friends should receive a hopeful opinion as to the result. They should be most carefully watched, and not committed to an insane asylum, if it was possible to care for them outside.

The Medical Society of the State of Colorado.—At the twenty-fifth annual convention, held in Denver on June 18th, 19th, and 20th, the following officers were chosen for the ensuing year: President, Dr. I. B. Perkins, of Denver; first vice-president, Dr. A. J. Robinson, of Aspen; corresponding secretary, Dr. E. R. Axtell, of Denver. The meeting was largely attended, and the order of the exercises is said to have been of the highest. Over sixty papers were presented, and two interesting addresses were given, one by Professor Victor C. Vaughan, of Ann Arbor, entitled The Restriction of Tuberculosis, and one by Professor John Ridlon, of Chicago, on The Diagnosis and Principles of Treatment of Hip-joint Disease. Sixty-two new members were added to the society.

Original Communications.

SYPHILIS OF THE BRAIN.*

A CLINICAL STUDY.

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There is perhaps no disease of the brain in which a timely and correct diagnosis is of greater practical importance than syphilis of the brain. It is always a grave disease, threatening life or very important functions of the mind or body, which may be irreparably damaged unless timely relief is brought; at the same time it is in very many cases amenable to treatment if recognized early enough; hence its great practical importance, which is still further enhanced by the fact that it is by no means an uncommon disease. Of 1,320 patients seen from May 1, 1892, to May 1, 1895, in my department at the Mount Sinai Hospital dispensary, 22, or 1·6 per cent., suffered from brain syphilis, as against 13 cases of locomotor ataxy seen, for instance, in the same period of time. Hjelmmann† estimates that one and a half to two and a half per cent. of all syphilitics get brain syphilis, excluding general paresis and tabes.

This is neither the time nor place to offer an exhaustive study of syphilis of the brain in all its bearings; my intention is rather to illustrate to-night some of the various forms in which the disease shows itself by a series of cases selected from some thirty cases seen in the course of the last three years, and to discuss the distinctive features of each case with especial regard to the diagnosis; finally, a few remarks will be devoted to the questions of general diagnosis, prognosis, and treatment.

Case I. *Syphilitic Meningo-encephalitis of the Left Fronto-parietal Region.*—A. P., thirty-five years old, of Augusta, Ga., was under the treatment of Dr. Howard Lilienthal in July and August, 1894, for stricture and urinary fistula. On August 21st he consulted me, upon Dr. Lilienthal's request, in reference to insomnia and general irritability. Large doses of chloral, chloralamid, and trional had not relieved the insomnia. The patient also complained of some headache. He denied specific infection. The examination at the time was almost entirely negative in its results. There was a slight hesitancy in speech, which his brother declared had always been present. In reckoning, the patient made mistakes, but both he and his brother declared he had always been poor at "figuring." The patient is "cranky" and unreasonable. The pupils are of the same size; respond well to light and accommodation. The discs are well defined and perfectly normal in appearance. The knee-jerks are somewhat exaggerated; there is no ankle-clonus. There is no tremor of the face or hands, no Romberg sign, no tenderness to percussion of the head. At the time his condition was looked upon as one of grave neurasthenia due to the excitement of undergoing repeated operations. The patient was not seen again till September 22d, when he was seen in consultation with Dr. Lilienthal at a hotel in the city. He had returned to Georgia meanwhile, and had been growing steadily worse, complaining a great deal of headache, showing difficulty of speech, and suffering from insomnia; he said and did foolish things, and was very intractable.

Present Condition, September 22d.—The patient is thin and poorly nourished; his face is congested; speech difficult, hesitating. When asked to give the name of some article, he hesitates quite a while before replying. He seems dazed and stupid, and only half understands what is said to him. Requests like "Show me your tongue," "Give me your hand," etc., must be repeated two or three times before he complies with them. He is able to name all simple articles shown him for the purpose. It is difficult to engage his attention and more difficult to hold it. Much of what he says spontaneously is unintelligible, the condition called paraphrasia being apparently present. When told to repeat sentences like "The ragged rascal ran around the rugged rock," he forgets half the words, and drops syllables from those he does say. Reckoning, absolutely bad. Marked hemiparesis of the right side, especially of the face and arm. Tongue protruded straight. No ocular nerve palsies. The pupils are unequal and respond sluggishly to light; contract well upon accommodation. The knee-jerk is difficult to obtain on account of the patient's inability to relax his muscles. Plantar and abdominal reflex absent. The patient soils his bed, evidently owing to his mental condition. A careful examination of sensation is impossible for the same reason.

There is marked tenderness to percussion over the left frontal and parietal region. There is no nausea or vomiting. Urine contains albumin, pus-cells, no casts, and no sugar. Pulse, 68 to 75. Lungs and heart normal.

Diagnosis.—Probably syphilis of the brain, specific meningo-encephalitis of the left frontal and parietal lobes (motor area). The presence at the same time of beginning general paralysis can not be excluded. The mental condition of the patient and the difficulty in speech favored the latter diagnosis. The diagnosis of cerebral syphilis was based upon the intense headache, the insomnia, the tenderness to percussion of the skull, the rapid development and persistency of the focal lesion, and upon the extensive involvement of the convexity of the brain, as shown by the presence of hemiparesis, a certain degree of motor and sensory aphasia, and by the extensive area of tenderness to percussion.

September 24th.—The patient was put under my charge; his condition has not changed. Inunctions of four grammes of mercurial ointment and ten to one hundred drops of a saturated solution of iodide of sodium three times a day were ordered. In the evening, at 8 p. m., I was called hurriedly to the patient; about 3 p. m. it was noticed that he was growing more and more drowsy; the last two hours he had been breathing very heavily and did not respond to anything said to him. I found the patient in a profound coma, pulse 40 to 42 (heart-beat counted), respiration very heavy—ten to a minute—the face congested, the pupils dilated, do not respond to light, corneal reflex lost, knee-jerks absent. Involuntary micturition and defecation. No response to calling, pinching, or pricking. Occasional moans.

An ice bag was immediately applied to the left side of the head; enemata of a saturated solution of Epsom salt, one quart at a time, were ordered to be given till a number of evacuations followed, four ounces of glycerin to be injected pure to increase the watery discharge. Under this treatment the patient's condition slowly improved, the breathing became easier, the pulse went up to 50 to 56, and the pupils responded slightly to light.

25th.—Early in the morning the patient was still in a semi-comatose condition; pulse, 52 to 60. The corneal reflex can be elicited; the patient responds with inarticulate mutterings to the calling of his name; he does not obey the order to show his tongue. He moans and puts his hand up to the left side of his head. Ice bag continued; salt and glycerin injections repeated, inducing a number of profuse watery discharges. During the day the patient's condition improved rapidly, he recognized his relatives, took liquid food, complained about his head. Aphasia and partial hemiplegia very marked; the tongue deviates to the right; pulse, 60 to 65; pupils respond to light.

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* Read before the Metropolitan Medical Society, May 28, 1895.

† See Mickle. On Syphilis of the Nervous System. *Brain*, spring, 1895, p. 99.

26th.—The patient is conscious, recognizes me as "doctor." Complains of headache. Ophthalmoscopic examination shows swelling of both discs, the arteries tortuous, and the veins dilated. The patient takes four hundred grains of iodide of sodium a day, and is rubbed with four grammes of gray ointment every day.

28th.—The patient is brighter, talks more, moves his right limbs more freely, and the facial palsy is less marked. The knee-jerks are present; the left is stronger than the right. Pulse, 66.

30th.—Speech much freer, though still very imperfect. The patient does not know the current year (says 1892) and makes gross mistakes in reckoning. He is very unruly; wants to walk about the room. He calls for the bedpan. Appetite good. Headache is so much better that the ice cap is removed.

October 1st.—The patient is very restless and impatient. His speech is much improved.

3d.—Facial palsy almost disappeared; the grasp of the right hand almost as good as that of the left. His headache is gone; he sleeps well at night.

5th.—Under the specific treatment the improvement in the patient's condition continued. He is able to multiply more correctly and knows the year and the month. The hemiplegia has almost disappeared. The right knee-jerk is exaggerated as compared with the left. The patient sat up.

7th.—He walked about the room. October 11th he walked out with his nurse. No tenderness of the head to percussion; no headache. The mental condition is much better; the patient is not intelligent, but is said never to have been so. He multiplies and divides now without error. He says "the ragged rascal," etc., without stumbling.

13th.—Nineteen days after the onset of the coma the patient returned south free from headache, with slight traces of his former hemiplegia, very little difficulty in speech, and able to sleep well.

Remarks.—The result of the treatment established the diagnosis made of syphilis of the brain. The presence of symptoms of general paralysis and their disappearance under the specific treatment is of interest; they were in all probability due to the specific meningitis over the frontal lobe. In a case of this kind it would not be surprising, however, if the patient ultimately fell a victim to general paralysis of specific origin.

Case II. *Persistent Hiccough; Staggering to the Left; Numbness in the Left Arm.*—J., aged thirty-five years, lawyer. In 1889 the patient acquired a chancre, and was subjected to a thorough and prolonged course of specific treatment by his physician, Dr. R. G. Wiener, and at the Hot Springs, Arkansas. August 17, 1893, in the absence of Dr. Wiener, he consulted me, complaining of general malaise, fatigue, insomnia, and a slight feeling of numbness in his left hand, which was constantly present for the last few days. He had been working very hard all summer without having had a vacation, and felt overworked and exhausted, as he put it himself. He had no headache at all. The examination showed no objective changes whatsoever in any part of the nervous system. He was advised to stop work and to take a vacation, and went accordingly to the Adirondacks. After he had been up there two days he began to have spells of vomiting without any feeling of nausea, and began to suffer from constant hiccough, which persisted with very short intervals day and night, so that he returned to the city. August 22d I saw him again. There was no headache. The numbness in the left arm was still present, but had grown no worse; there was no loss of power in any of the limbs. The pupils responded promptly to light and accommodation. Discs normal. No ocular nerve palsies. The knee-jerks were lively. In walking, the patient staggered toward the left, so that in passing through a hall or mounting the stairs he knocked against the balustrade or the wall again and again. When standing upright, there was also swaying to the left.

The diagnosis was made of syphilis of the brain; the staggering to the left indicated the presence of a focus in the region of the left cerebellar peduncles or in the vicinity of the middle lobe of the cerebellum. It is impossible to state from what point of the nervous system the persistent hiccough was produced. Hiccough has been observed after apoplectic strokes and in tubercular meningitis, and is considered an ominous sign in those diseases.* Broadbent † has recorded a case of brain syphilis in which hiccough was associated with bulimia. In all probability the symptom is related to cerebral vomiting, which is most frequently due to increased irritability of the gastric part of the vagus centre. ‡

Dr. Sachs saw the patient with me two days later and agreed with my view of the case. The patient made a rapid recovery under the iodides, all symptoms disappearing within ten days. He has remained well ever since.

Case III. *Cephalalgia of Fifteen Years' Standing.*—J. E. D., fifty-five years old, of Way Cross, Ga., was referred to me November 4, 1894, by Dr. Howard Lilienthal. The patient claims to have suffered for the last fifteen years from intense headache. It has been almost constantly present during this time, but would be some weeks worse than others. The pain affected the whole head, but was most severe in the left occipital region, especially during an exacerbation of the pain, which occurred most frequently toward evening or at night, robbing him of his sleep. The pain has incapacitated him from work to a great degree. For many years he has done only the lightest kind of work on that account, at a railway station.

The patient has had malarial disease a number of times. He confesses having had a small sore more than thirty years ago, in the war. Never had any secondary manifestations of any kind. He is married and has four healthy children; one child died when four weeks old. His wife has never miscarried.

Present Condition, November 4, 1894.—Sallow-complexioned, lean man; painful points in the supraorbital notches and both great occipital nerves. Large, hard lymphatic node immediately back of the left mastoid process. Cervical glands enlarged, hard. No cubital glands. Percussion of the left occipital region painful. Skull fairly even to palpation. No paralysis or disturbance of sensation in any part of the body. Discs well defined, normal. Spleen not enlarged. In view of his malarial history the patient was put upon large doses of quinine and upon Fowler's solution; the treatment was continued without any effect upon the headaches whatsoever for twelve days. On November 16th he began taking fifteen drops of the saturated solution of potassii iodidi, increasing the quantity by five drops with each dose till a hundred drops were reached, three doses a day to be taken.

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* Oppenheim. *Nervenkrankheiten*, p. 769.

† Broadbent. *Lancet*, 1874.

‡ Gowers. *Diseases of the Nervous System*, vol. ii, p. 130.

November 20th.—The patient reports that he feels a great deal better; had next to no headache yesterday for the first time in many years.

26th.—The patient has had no headache for the last five or six days. Discharged cured, with instructions to continue taking the iodide.

Dr. Lilienthal has since heard from him; he has remained perfectly well and is like a changed man, being able to do the work of an average man with ease.

Remarks.—The case belongs to Fournier's first category of cases of syphilis of the brain—that of cephalalgia; it is remarkable for the duration of the headache without any further nervous phenomena developing, and for the rapid recovery under appropriate treatment. As a rule, headache is a forerunner of graver symptoms of brain syphilis; it is the symptom *par excellence* which is relieved most quickly by iodide of potassium.

CASE IV. *Headache, Sensory Focal Discharges, Temporary Verbal Amnesia, and Transient Alexia.*—Mrs. M., aged thirty-two years, was first seen at the Mount Sinai Hospital Dispensary, December 19, 1894. She has been married ten years, was confined twice; her first child died when three days old, the second when two days old; both were weakly. She miscarried twice. Her confinements were not difficult. Three years ago she had an eruption on the palms of her hands for some time. For the last fifteen months she has been suffering from headache, which is worse on the left side of her head, but often affects both sides; the pain is throbbing and has been growing worse of late. Two months ago her right hand suddenly became numb and she felt the numbness spread rapidly up her arm to the right side of her face; finally, she noticed that she had forgotten the names of people and of the objects about her; she was able to talk some and asked her husband the names of things and people. The attack lasted half an hour; after it had passed by her right hand felt weak for several hours. She has had two similar attacks since, the last one three days ago. In the intervals between the attacks she has noticed no difficulty of speech. She suffers also from vertigo, nausea, and occasional vomiting. Six months ago she began to notice that once in a while when she took up the newspaper she was not able to read; she saw letters, but could not make out the words. The next day, or sometimes the same evening, she was again able to read, so that she did not know what to make of it. She never had any difficulty in writing.

Present Condition.—The patient is pale, of good intelligence, quiet in her manner. There is no sign of any motor paralysis nor of any sensory disturbance. The discs are normal; vision is perfect in both eyes (Dr. Koller). The knee-jerks are both lively; there is no ankle clonus. There are no stigmata of hysteria. A prolonged and detailed examination of speech failed to show any defect. Her ability to read was tested; she made errors in reading unusual or long words, but hardly more than any average person in her state of life. There is no sensitive area on the skull. The urine is free from sugar and albumin; the cardiac sounds are quite normal.

Diagnosis.—The diagnosis was made of specific endarteritis in the ramifications of the left Sylvian artery with temporary disturbances of the blood supply to the arm, face, and speech centres.

The patient was put upon the saturated solution of the iodide of potassium up to three hundred minims a day, and upon a quarter of a grain of the protiodide of mercury three times a day.

December 26th.—The patient reports her headache is better; she has had no spells of any kind.

January 5th.—No more headache at all for the last few days.

12th.—The patient declares she feels perfectly well. She is anæmic, and iron, quinine, and strychnine are ordered. The patient has since been seen every two to three weeks, and never reported any further disturbance.

Remarks.—The case is one of somewhat more than ordinary interest. The diagnosis lay between a functional (hysterical) disorder and a vascular lesion inducing a temporary disturbance in the blood supply. The absence of all hysterical stigmata excluded the diagnosis of hysteria. The history of persistent headache, the previous history of weakly children and miscarriages, of the palmar eruption, and the character of the spells, all favored the diagnosis of a specific endarteritis. This view was borne out by the success of the specific treatment.

Symptoms of focal cortical disturbance, developing independently of any traumatism, are always suspicious of specific trouble; they are often the precursors of graver local disorder, such as paralysis and permanent aphasia. If there is reason to believe the blood-vessels are involved, the treatment should be rapid and energetic, even at the cost of disturbing the general system, for the danger of a rupture or permanent occlusion leading to irreparable destruction of brain tissue is great.

A consideration of the focal discharges the patient was subject to is of interest; they were all sensory in character—at no time was there any muscular twitching; this indicated that the area of disturbance was located back of the fissure of Rolando, in the lower part of the ascending parietal convolution and the cortex immediately behind. The temporary partial aphasia which occurred in connection with these sensory discharges was of the character of verbal amnesia, the patient forgetting for the time the names of people and objects; this kind of disorder of speech occurs in lesions located in the posterior part of the first and second temporal convolutions. The patient's experience in not being able to read her newspaper at times indicated, in the absence of any other disturbance of vision, the occurrence of transient alexia or word blindness. Word blindness occurs most frequently in the presence of a lesion in the visual speech centre in the lower parietal region, back of the sensori-motor area (gyrus angularis and perhaps supramarginalis); it occurs also at times in connection with pure word deafness and even motor aphasia, especially in the uneducated, who read, we might say, by way of their memories of word sounds or even of word movements (reading half aloud or moving the lips and tongue while reading). A disturbance in the motor speech centre in our case can be excluded; the absence also at the time of the occurrence of the alexia of any indication of word deafness would point rather to a temporary disturbance in the visual speech centre itself. A glance at the figure showing the distribution of the middle cerebral artery will show how a specific endarteritis in the three last branches (the ascending parietal, parieto-sphenoidal, and sphenoidal arteries) would disturb the circulation in the ascending parietal, supramarginal, angular, and temporal convolutions.

Case V. *Gumma of the Pons; Crossed Paralysis.*—J. H., thirty-six years old, married twenty-one years, has been pregnant twelve times; two miscarriages, four children died in early infancy. The patient was first seen with Dr. Morris Manges at the Mount Sinai Hospital early in August, 1893.

Previous History.—In June, 1892, the patient suffered from pain in her left shoulder and arm. In July she began to have headache, especially in the back of her head. The pains disappeared under medical treatment at the time, but returned worse than before in December. In March and April, 1893, the pain was so severe that the patient would scream aloud. When the headache was worst she always vomited. In May she entered the hospital. The examination showed the presence of choked discs, paralysis of the right abducens, deafness in the right ear, and marked paresis of the left arm and leg. Sensation in the latter seemed diminished. Dr. Manges, recognizing the condition, put her upon iodide of potassium, pushing it as far as twelve hundred grains a day, without any effect upon the patient's condition whatsoever. When I saw her she was moaning and screaming aloud with pain; she was in a stupor of moderate degree and responded only to a few orders, such as "Show your tongue," after repeated commands. The physical condition just described was found, also the presence of partial reaction of degeneration in the muscles of the right half of the face. The corneal reflex was present upon both sides; sensation could not be tested on account of the patient's mental condition. The pupils responded sluggishly to light. The left knee-jerk was exaggerated and ankle-clonus could be obtained on the left side. A large, radiating, deeply pigmented scar was found on the right thigh and knotty swellings along the tibial shanks.

The diagnosis of syphilis of the base, involving the right half of the pons in the region of the sixth, seventh, and eighth nerves, was agreed upon, the diagnosis of lues being based on the presence of the scar and tophi and upon the well-known predilection of syphilis for the base of the skull and brain. The crossed sixth, seventh, and eighth-nerve paralysis rendered the diagnosis of the exact location of the lesion easy. The disturbance of sensation in the left limbs indicated that the lesion penetrated to the fillet.

The patient was rubbed with mercury, one drachm a day, and the iodide of potassium continued. She made a rapid recovery and was referred to my department at the dispensary on August 26th. The only function which had suffered permanent injury was her vision; a certain degree of atrophy had developed, and her vision was reduced to $\frac{10}{40}$ in the right and $\frac{10}{30}$ in the left eye. A slight weakness of the right abducens disappeared under further specific treatment and strychnine. The hearing in the right ear was almost as good as in the left. But for an exaggerated knee-jerk and the presence of ankle-clonus no sign of hemiplegia was left.

The patient was seen on and off for several months, and never showed any recurrence of symptoms; her vision did not improve during this time.

Remarks.—The permanent amblyopia remaining after complete recovery from the active morbid process illustrates one of the most serious dangers to which this class of patients are exposed, and emphasizes the importance of an early diagnosis of their condition and of prompt specific treatment. Before the case was put under Dr. Manges's care it was looked upon and treated for some time as a case of hysteria. No case could demonstrate more pertinently the value of mercury in the treatment of syphilis of the brain; whereas under twelve hundred grains of iodide of potassium a day the patient showed absolutely no improvement, she made a rapid recovery as soon as mercurial inunctions were resorted to.

Case VI. *Hæmorrhage in the Pons in June, 1894, Crossed Hemiparesis and Ataxy remaining; in April, 1895, Headache, Transitory Aphasia, and Syphilitic Neuroretinitis.*—Henry B., forty-five years old, German; porter at present, formerly a distiller for twenty-five years; was first seen April 4, 1895. The patient claims to have been perfectly well until June 29, 1894; the evening of that day, while locking up the store, he suddenly began to stagger in his walk and fell to the ground without losing consciousness; after resting half an hour he was able to walk part of the way home with the aid of another man. At home he went to bed; he felt full in his head and had some headache. He was able to move his limbs freely, but says his right arm and leg felt "heavy." He remained in bed two weeks, during which time he was always able to leave his bed to go to the closet. After moving about the house for two weeks he returned to his work; his condition has remained stationary ever since. His head often feels heavy and dull, but he has had no headaches. When on his feet he suffers from vertigo, which abates when he sits or lies down. He has never had any trouble with his eyesight or speech. His right arm and leg feel numb and heavier than the left; occasionally he has indefinite pains in both legs.

Former History.—The patient claims never to have been seriously ill. In spite of his occupation as distiller he says he never touched liquor, and his wife confirms his statement. He denies ever having had a venereal sore; had gonorrhœa when a young fellow. He has been married twenty-two years, has three children living, lost one from diphtheria, one from unknown disease. His wife miscarried once.

Present Condition.—Tall, broadly built, muscular man, of an anæmic complexion. In entering the room his gait is very unsteady; there is ataxy present of the tabeto-cerebellar type. In trying to wheel about on his heels he staggers a great deal; slight Romberg.

Eyes: Eyesight good, no hemianopsia; eye movements good; slight nystagmus noticeable in extreme abduction of the left eye. Pupils respond promptly to light and accommodation.

The left naso-labial furrow is less marked than the right, especially when the teeth are shown. In puffing up his cheeks the patient puffs up the right one a great deal better than the left. In laughing, the paresis of the left side of the face is very noticeable. When he squeezes his eyes shut he always draws his mouth to the left.

Electrical examination of the face: The right facial responds promptly to the faradaic current (13·5 centimetres); a stronger current (11·6) is required to obtain a response from the left nerve; a fibrillary tremor is noticeable during the contractions of the left labial muscles. The galvanic excitability of the left nerve is diminished as compared with the right side.

The direct excitability of the muscles on the left side to the faradaic and galvanic currents is diminished, Ca C C > An C C; the contractions are not sluggish. An C C occurs much earlier on the left than on the right side. We have present, therefore, a very moderate degree of partial reaction of degeneration on the left side of the face.

The tongue is protruded straight. The grasp of the right hand is distinctly weaker than that of the left; the right leg shows no objective signs of weakness, but the patient states that it tires a great deal more quickly that the left one. The deep reflexes of neither arm is increased. The knee-jerk is lively on both sides, more so on the right. Plantar and abdominal reflexes very lively.

Sensation.—The right side of the patient's body, including the extremities, shows diminished tactile sensibility; a camel's-hair brush is occasionally not perceived, especially in the lower leg; the touch of a pin is always felt, but the point is invariably appreciated as head on the right side up to a line about two inches above the nipple; above this point sensation is subjectively dulled, the patient declaring spontaneously that he feels the point very much better on the left side. The sensibility to pain, as tested by the prick of a pin, is diminished and partly lost in the area below the line mentioned above. The same is true of the sensibility to temperature, cold being oftener mistaken for warm than *vice versa.* There is a diminished subjective sensibility to pain and temperature above the line mentioned. On the left side of the body sensation is perfect; the region above the left nipple and the gluteal region are rather hypersensitive. In the face sensation is equally good on both sides for all qualities. The corneal reflex is present. There is no appreciable difference in the taste on both sides.

The heart, lungs, and kidneys are perfectly sound. There is no sign of arterio-sclerosis.

Diagnosis.—The diagnosis was made of a lesion on the left side of the pons, involving the pyramidal tract, the fillet, perhaps a part of the formatio reticularis, and the intramedullary part of the root of the facial nerve. In the absence of any source for an embolus, and in view of the sudden onset of the symptoms, the lesion was in all probability a hæmorrhage.

April 21st.—The patient complains of headache in the left frontal region. Sol. potass. iod. sat., gtt. x—xx t. i. d., prescribed.

30th.—According to his family's statement, the patient has been complaining more and more of headache; the last two nights it has kept him awake. During the day, while at work, his fellow-workmen noticed that he was rather "mixed up" in what he said, so that they often did not understand him. In the evening he came home in such a disturbed condition that his family sent for me. I found the patient conscious, able to walk about, and showing no signs of any paralysis whatever, especially no hemiplegia. There was present, however, a condition of complete motor aphasia. He was shown various articles and asked to state their names, but all he could say was, "I eat, you eat," which he kept on repeating in reply to everything he was asked. When the name of the article in question was told him he nodded approvingly, but was unable to repeat it. He was able to say a few other disconnected words, such as "no," "to-morrow," "me." He understood everything said to him, sat up, lay down, opened his coat, showed his tongue, pointed to various parts of his body, as ordered. I wrote on a piece of paper "Show me your teeth," and he showed his teeth. An ophthalmoscopic examination was made, and he turned his eyes as directed without hesitancy. The ophthalmoscopic examination showed the presence of a pale-yellowish swelling of both discs; the discs very prominent; the vessels tortuous.

The left frontal and anterior parietal regions are very sensitive to light tapping; there are two or three points more tender than the rest. Bladder and rectal functions in good order. A saline purge, phenacetine, and an ice cap were prescribed.

May 1st.—During the night the patient slept fairly well. His headache continues unabated. He has recovered the power of speech entirely, and told his wife in the early morning he remembered the occurrences of the previous evening very well: how the doctor had shown him a key, a pencil, and a knife, and he had not been able to name them, *though he knew their names very well.* He wanted to speak to us, but had not been able to. No change otherwise in the patient's condition. Unguentum cinerei, three grammes a day, and a saturated solution of iodide of potassium, twenty to a hundred drops three times a day, prescribed.

May 3d.—Headache very little easier.

5th.—The patient was examined by Dr. Koller, who reports: "The discs are swollen, the retina in the immediate vicinity is œdematous, the arteries are tortuous; impresses me as a neuroretinitis syphilitica. In the periphery of the right retina in the upper temporal quadrant I have found a rose-colored nodule, which strengthens the diagnosis considerably."

8th.—The patient reports that his headache is getting better; last night he was able to sleep without an ice cap for the first time. Tenderness to percussion diminished. Dr. Koller examined the patient after introducing homatropine; the vessels of the disc and retina show distinctly a perivasculitis characteristic of syphilis. The small nodule in the retina is probably a miliary gumma.

12th.—The last two days the patient has had no headache at all any more. The tenderness to percussion is very slight. Vision $\frac{10}{10}$ in both eyes.

19th.—The condition of the eyes unchanged (Dr. Koller). The ataxy slight; hemiparesis and left facial paresis, present before the onset of the recent symptoms, have not changed.

Remarks.—The combination of a lesion at the base and a second one at the convexity in this case is very characteristic of syphilis of the brain. The valuable information obtained from the ophthalmoscopic examination, confirming the diagnosis of syphilis beyond a doubt, is of special interest, especially in view of the absolute absence of any history or other traces of syphilis.

Case VII. *Focal Epilepsy, Temporary Aphasia, Headache; Recovery; Relapse after Six Months, consisting of Headache, Polyuria, and Polydipsia.*—Becky G., forty-eight years old, was referred to me on September 28, 1894, by Dr. Lustgarten, who had been treating her for gummata of the lips. The patient has been married twice; has had one healthy child from her second and a number of healthy children from her first marriage; never miscarried nor had a stillbirth. No source of infection can be ascertained.

September 28th.—The patient has been suffering for the last five weeks much from headache, which has become much worse since September 24th. On that day the middle and small fingers of her right hand suddenly began to twitch and then became stiff; at the same time she lost all power of speech for half an hour. When she began to talk again she was mixed up in what she said (paraphasia) for the next few hours. For fifteen hours she was hoarse and her right hand felt weak for a few hours. On September 27th the index and middle fingers of her right hand suddenly became numb and stiff, and the patient was unable to speak for five minutes.

Present Condition.—The patient is very anæmic. The right side of her face is flattened; there is distinct paresis when the teeth are shown. Electric reactions unchanged. Pupils respond well to light and accommodation. Ocular movements good. Knee-jerks lively on both sides. No imperfection of speech noticeable.

The patient did not stand mercury well and was put upon iodide of potassium alone; under this treatment the symptoms disappeared within two weeks, the treatment being continued for some weeks longer, however.

April 10th.—The patient complains again of severe headache, of vertigo, general debility, of an unquenchable thirst, and of polyuria. She passes nine quarts of urine in twenty-four hours (by measurement). The urine has a specific gravity of 1·003, is pale, and free from both sugar and albumin. There are no other symptoms of any nerve lesion present.

Under specific treatment the headache and vertigo have improved, but the polydipsia and polyuria continue unchanged.

Remarks.—Oppenheim * has called attention to the rather frequent occurrence of polydipsia and polyuria in syphilis of the brain. He regards the polyuria as a general cerebral symptom. Probably it is connected with the vaso-motor centres in the medulla which occasion diabetes mellitus and diabetes insipidus when pricked by Claude Bernard's famous method. The symptom is of diagnostic importance, inasmuch as its presence in a case of cerebral disease should excite suspicion of syphilis.

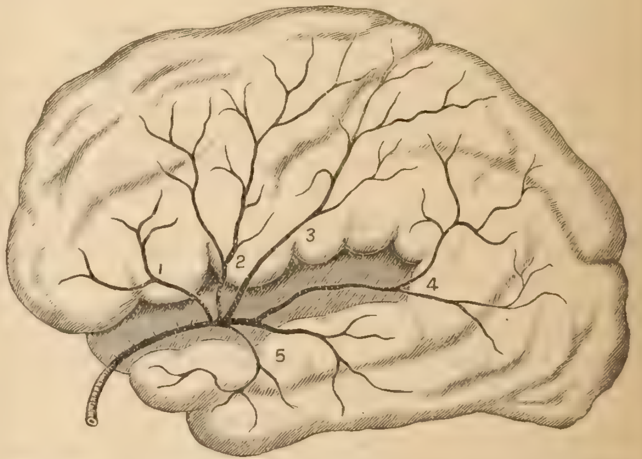
The cases recorded illustrate some of the protean clinical forms in which the disease shows itself. I say some, for the series of cases given contains by no means all the types met with; cases illustrating the apoplectic and basilar meningitic forms might be added, but I have already taken up too much of your valuable time.

In conclusion, I should like to say a few words about the general diagnosis, prognosis, and treatment of syphilis of the brain. It has been my experience that the disease in its early stages is most frequently confounded with the functional neuroses, neurasthenia, hysteria, and epilepsy; this is due to the transitory character of many of the focal symptoms and the frequent presence of such neurasthenic symptoms as insomnia, general irritability, and headache. I should like to offer the following list of symptoms which should arouse suspicion of syphilis of the brain in a physician's mind; they are *especially suspicious if they occur in irregular combinations:*

1. Persistent headache, which may be worse toward evening or at night, and is often associated with insomnia and general irritability.
2. Pupillary changes: inequality of the pupils (when not congenital), myosis, mydriasis, the Argyll-Robertson pupil, the loss of response to light and accommodation.
3. Ocular nerve palsies.
4. Irregular bilateral cranial nerve palsies.
5. Hemianopsia, optic neuritis, especially hemianopsia bitemporalis fugax (Oppenheim).
6. Focal epileptiform discharges, motor and sensory, occurring without history of injury.
7. Epilepsy developing after the age of twenty-five (excluding injury, alcoholism, lead, and uræmia).
8. Temporary monoplegias.
9. Temporary aphasia in any form.
10. Apoplexy before the age of fifty (excluding lead, cardiac and renal disease).
11. Polydipsia and polyuria.
12. The tendency of the symptoms present to improve spontaneously and then relapse.

To these we must add the presence of specific disease of the cord. A previous history of infection or traces of specific disease in other parts of the body (scars, periostitis, etc.) furnish important corroborative but by no means conclusive evidence. A previous history of syphilis may be obtained in a case of malignant new growth, as I myself have seen in two cases of sarcoma. The result of specific treatment often furnishes valuable *post-hoc* evidence of the ætiology of the disease in a given case; it must be borne in mind, however, that occasionally remarkable improvement and even disappearance of the symptoms may follow large doses of iodide of potassium in non-specific tumors of the brain, as the extraordinary cases recorded by Bramwell * and Nammack † demonstrate.

The prognosis of the disease varies with the special character of the morbid process present in a given case; if brain tissue has been destroyed by acute softening following thrombosis or a hæmorrhage, or by the encroachment of a gumma, no amount of mercury will restore the tissue destroyed. In general, it may be said that the earlier the disease is properly treated the better the prognosis; there are few diseases in which prompt and efficient treatment is of such essential importance as brain syphilis. In considering the prognosis it must always be remembered that relapses are liable to occur, as is the case in other manifestations of the disease. It is therefore always well to subject the patients to a prolonged course of specific treatment even after all symptoms have disappeared, and to be alive to the very first signs of a recurrence.



Distribution of the middle cerebral artery on the surface of the brain. (After Duret.) 1, inferior frontal branch; 2, ascending frontal branch; 3, ascending parietal branch; 4, parieto-sphenoidal branch; 5, sphenoidal branches.

Concerning the treatment itself, two points must be emphasized. In the first place, unless a special contraindication exists it is best to combine mercurial inunctions (three to five grammes) with the administration of iodide of potassium or sodium in doses of three hundred to four hundred grains a day, which are very well borne by most patients; in fact, the large doses often create less disturbance than small ones, according to my experience. In the second place, if syphilis of the brain is suspected in a given case and a tentative course of specific treatment is decided upon, the latter must not consist in the administration of small doses of iodide of potassium. I have seen cases of brain syphilis get worse under fifty grains of iodide of potassium a day and respond promptly to treatment as soon as mercurial inunctions and three hundred grains of iodide of potassium a day were ordered (Case VI, for instance). In such a case, therefore, the tentative treatment should be just as vigorous as though the diagnosis of syphilis were well established; if no improvement at all occurs within four weeks, none is liable to occur from further specific treatment.

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* Oppenheim. *Berl. klin. Wochenschr.*, 1889, No. 48.

* Bramwell. *Remarks on Intracranial Surgery, delivered before the Medico-chirurgical Society of Edinburgh*, February 21, 1894, p. 4 of the reprint.

† Nammack. *Medical Record*, May 12, 1894.

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OBSERVATIONS ON EXCESSIVE INTESTINAL PUTREFACTION.

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(*Continued from page 5.*)

Excessive Intestinal Putrefaction in Kidney Disease.—The fact that chronic nephritis is commonly associated with an excess of the products of intestinal putrefaction was first noted by Biernacki * in 1891. In his studies Biernacki used typical cases of chronic nephritis, uncomplicated and said to be free from symptoms of intestinal disorder of any kind. In his carefully studied cases the ethereal sulphates were present in greater amount, at least as compared with the preformed sulphates, than in health, and the conclusion is reached that such excess is one of the features of chronic nephritis. The interest of Biernacki's observations is heightened by the fact that while studying the aromatic sulphates he made observations also upon the hydrochloric acid of the gastric juice in his cases of nephritis and found it to be distinctly decreased in amount. Moreover, there seemed to be a relation between these two classes of findings: when the excretion of putrefactive products was large there was a greater decrease in the amount of HCl secreted and greater evidence of gastric disorder than when the aromatic sulphates of the urine were not appreciably increased.† It is, of course, very tempting to go a step further and conclude that the relation just mentioned is to be explained by the fact that the gastric juice normally exerts a powerful influence in checking intestinal putrefaction, while the deficiency in HCl removes this check. And it can not be denied that this absence of HCl may be an important factor in determining an excess of the aromatic sulphates. But the origin of such excess is probably more complex than this, and we are not even fully assured that the HCl of the gastric juice really plays so important a rôle as has been ascribed to it in checking intestinal putrefaction. One of the best experimental evidences of its action is that brought forward by Kast, ‡ who showed that the neutralization of the gastric juice by sodium carbonate was followed by an increased excretion of the ethereal sulphates. Yet, as von Noorden has indicated, it is by no means certain that this result is the consequence of neutralization of the acidity of the gastric juice. The action of the alkali is not limited to the stomach, and its direct effect upon the intestinal contents may be such as to favor putrefaction there. Then, again, we have to note the facts which we have observed that the neutralization of the gastric juice by alkalies may have no appreciable effect on putrefaction, and that the use of HCl by the stomach may have no influence in decreasing putrefaction.

As will be seen by the figures given in connection with the following cases of nephritis, which were kindly put at our disposal by Dr. Northrup and Dr. Hedges, the increased excretion of aromatic sulphates observed by Biernacki was present in a number. In two of the cases (those of I. O. and R. H.) the ratios are such as belong to health, but inasmuch as all the cases were on a milk and broth diet—that is, on a diet which normally reduces the ratio to 1 to 15 or 1 to 20—we may at least question the normal character of the ratio. In the remaining cases there is no doubt of the excess of aromatic sulphates. In one of the cases of acute nephritis the excess is particularly striking. We may conclude that some form of excessive intestinal putrefaction is a common occurrence in nephritis. Much more extended observation is necessary to determine what forms of nephritis, if any, are especially apt to be thus complicated.

Patient aged thirty-two years; ill three weeks. Free diuresis for three days. Acetate of potassium for the last time on the 6th. No drugs since that date. Urine contains abundant albumin. Greatly diminished free HCl. Hæmaturia.

Date.	Preformed sulphates, grammes.	Combined sulphates, gramme.	Ratio.	
16th........	4·4235	0·6936	6·5	
18th........	2·2274	0·4816	4·6	
20th........	2·1454	0·3740	5·7	Milk diet.
21st.........	1·7647	0·6897	4·7	
23d..........	1·6668	0·6048	2·7	
24th........	2·3480	0·3460	6·7	
25th........	2·3832	0·2772	8·5	HCl after meals.
26th........	1·7232	0·4392	3·9	
28th........	2·8840	0·3480	8·2	Middle diet: proteids, 59·8 grammes; fat, 34·5 grm.
29th........	3·9420	0·3780	10·4	Carbohydrates, 26·3 grm. daily.
30th........	2·0010	0·4920	4·0	HCl discontinued.
31st.........	2·0160	0·5805	3·4	
	2·4455	0·5681	4·3	Average from 16th to 23d.
	2·6560	0·3576	7·4	Average from 24th to 29th; HCl after meals.
	2·0085	0·5145	3·9	Average without HCl.

Patient, aged twenty-eight years; ill two months. Free diuresis for one week. Free HCl usually absent, weak traces on the 23d and 31st. Bowels regular. Urine contains much albumin. Hæmaturia diminishing since the 24th.

These tables illustrate clearly the low ratio of sulphates seen in Bright's, and the influence of HCl in modifying

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* Ueber die Darmfäulniss bei Nierenentzündung und Icterus. *Deutsches Archiv für klinische Medicin*, Band lxix, Heft 1, 1891.

† Some of Biernacki's figures are appended.

‡ Ueber die qualitative Bemessung der antiseptischen Leistung des Magensaftes. *Zeitschrift zur Eröffnung u. s. w.*, Hamburg, 1889, S. 1.

See also Wasbutzki, *Archiv für experiment. Pathologie und Pharmakologie*, Bd. xxvi, S. 133; and Stadelmann, *Ueber den Einfluss der Alkalien auf den menschlichen Stoffwechsel*, 1890.

Date.	Preformed sulphates, grammes.	Combined sulphates, gramme.	Ratio.	
6th	1·012	0·2448	4·1	
7th	2·460	0·4165	4·8	
8th	1·1136	0·3216	3·4	
9th	1·0980	0·7290	1·5	
10th	1·7062	0 4978	3·4	Milk diet.
11th	1·9080	0·4200	4·5	HCl begun.
13th	1·3936	0·1482	9·3	
14th	1·1126	0·0942	11·8	
15th	1·9392	0·1776	10·9	
17th	1·6740	0·1860	9·0	
18th	2·0553	0·4335	4·7	HCl stopped.
22d	1·7450	0·3200	5·4	
23d	2·6300	0·4100	6·4	Ordinary diet: proteids, 95·3 grammes; fat, 66·9 grammes; carbohydrates, 477·7 grammes,
24th	2·6376	0·4872	5·4	
25th	2·3954	0·2031	11·8	
26th	1·6160	0·1240	13·0	
27th	2·5530	0·1150	22·2	
28th	1·7472	0·1176	14·8	HCl used.
29th	2·5960	0·2200	11·8	
	1·4804	0·4882	3·3	Average, 6th to 11th, without HCl.
	1·5298	0·1515	10·1	Average, 13th to 17th, with HCl after meals.
	2·6669	0·4127	6·4	Average, 18th to 24th, without HCl.
	2·1875	0·1558	14·0	Average, 25th to 29th, HCl after meals.

this ratio by checking the formation of putrefaction products eliminated as ethereal sulphates.

Case I.—I. O., aged thirty-four years; weight, one hundred and forty pounds. Moderate alcoholic habit. Present trouble began several months ago after exposure to cold, with œdema of the lower extremities and scanty urine. Now there is great œdema of the lower extremities and abundant urine containing considerable albumin. Constipation, good appetite, no apparent anæmia. Diet: milk, broths, and a little bread.

Date.	Preformed sulphates, grammes.	Combined sulphates, gramme.	Ratio.	Indigo blue.	Urea, grammes.
Nov. 28th.....	1·923	0·171	11·2	Weak.	25·480
Dec. 1st.......	1·787	0·137	13·0	Strong.	18·214
Dec. 2d.......	2·348	0·077	30·5	"	

Case II.—R. H., aged thirty-eight years; weight, one hundred and forty pounds. Has had several attacks of articular rheumatism, and for several years has been troubled with dyspnœa. About seven months ago began to have œdematous extremities and scanty, sometimes bloody, urine. At present is weak, has œdematous extremities, dyspnœa, enlarged heart with systolic murmur at base, and scanty urine with considerable albumin and abundant casts. Diet: milk and broths.

Date.	Preformed sulphates, gramme.	Combined sulphates, gramme.	Ratio.	Indigo blue.	Urea, grammes.
Nov. 19th	0·911	0·078	11·7	Medium.	
Nov. 20th	0·1185	0·103	11·5	Weak.	
Nov. 21st......	0·911	0·065	14·0	Medium strong.	
Dec. 1st.......	0·1082	0·126	8·6	Weak.	18·249

Case III.—G. V., aged forty years; weight, two hundred pounds. For two months has had œdematous extremities, dyspnœa, feeble heart action, and rather scanty urine. Albumin in small amount, granular casts abundant. Milk diet. Bowels regular, appetite fair, no constipation.

Date.	Preformed sulphates, grammes.	Combined sulphates, gramme.	Ratio.	Indigo blue.	Urea, grammes.
Nov. 21st......	1·257	0·208	6·1		
Nov. 21st......	2·154	0·250	8·6	....	16·85

Case IV.—H. G., aged forty-two years; weight, two hundred and seventeen pounds. Rheumatic and alcoholic history. Duration of present trouble, two years. At present, general anasarca, dizziness, constipation, dyspnœa, and feeble heart action. Urine scanty, albumin moderate in amount. Diet: milk and broths.

Date.	Preformed sulphates, gramme.	Combined sulphates, gramme.	Ratio.	Indigo blue.	Urea, grammes.
Nov. 13th	1·236	0·184	6·7	....	17·162
Nov. 14th	1·599	0·225	7·1	....	22·630
Nov. 15th	1·752	0·164	10·7		
Nov. 16th	1·639	0·194	8·4		

Case V.—N. C. S., aged forty-nine years; weight, one hundred and thirty pounds. Moderate alcoholic habit. Present trouble dates back five years, when she began to suffer from headache, dizziness, swelling of extremities, dyspnœa, and palpitation of heart. Urine, low specific gravity and abundant. Albumin in moderate amount. Diet chiefly milk.

Date, Dec. 17th.

Preformed sulphates...............	0·537 gramme.
Combined sulphates................	0·119 "
Ratio...........................	4·5
Indigo blue..................... ..	Strong.
Urea............................	10·886 grammes.

Case VI.—J. S., aged twelve years; weight, ninety-six pounds. Family history of Bright's disease. Personal history, scarlet fever. For four months has suffered from œdema of feet, ankles, and eyelids, headache, and moderate anæmia. Appetite fair, bowels regular. Albumin abundant in urine; quantity of urine about normal. Diet: milk, bread, and meat once daily.

Date	Preformed sulphates, gramme.	Combined sulphates, gramme.	Ratio.	Indigo blue.	Urea, grammes.
Nov. 13th	1·612	0·168	9·6	Negative.	19·884
Nov. 14th	1·332	0·168	7·9	Medium strong.	17·759
Nov. 15th	1·309	0·109	12·0	Weak.	
Nov. 16th	1·308	0·161	8·7	Very strong.	

Case VII.—M. B., aged nineteen years. Two years ago was exposed to cold and wet and afterward had œdema of face and extremities and anasarca, with bloody and scanty urine. Has not been well since. At present has œdematous extremities, ascites, scanty urine, headache, frequent and sometimes severe vomiting, and loss of appetite and failing sight.

Date.	Preformed sulphates, gramme.	Combined sulphates, gramme.	Ratio.	Indigo blue.	Urea, grammes.
Jan. 8th.......	.....	0·051	...	Negative.	4·983
Jan. 9th.......	0·536	0·078	6·9	"	7·587
Jan. 13th......	0·273	0·091	3·0	"	6.674

Case VIII.—C. T., aged thirty-two years. Family history of Bright's and bad personal alcoholic history. Present trouble dates back several months. At present slight general anasarca, dizziness, weakness, numbness, paræsthesia of legs. High-tension pulse. Urine scanty. Albumin in small amount and granular casts abundant. Milk diet.

DATE.	Preformed sulphates, gramme.	Combined sulphates, gramme.	Ratio.	Indigo blue.	Urea, grammes.
May 18th......	0·224	0·145	1·5	Strong.	10·065
May 19th......	0·306	0·185	1·6	Medium.	10·299

Case IX.—J. C., aged sixty years. For about two years has had occasional swelling of feet, headache, and gradually increasing loss of vision due to neuro-retinitis. Is now without gastric or intestinal symptoms on a mixed diet; has moderate albuminuria, and is passing a large amount of urine which contains hyaline and granular casts.

DATE.	Preformed sulphates, gramme.	Combined sulphates, gramme.	Ratio.	Indigo blue.	Urea, grammes.	
Nov. 30, 1894.	1·404	0·223	6·3	Weak.	18·469	Milk diet.
Dec. 10th....	1·406	0·276	5·1	....	16·630	
Jan. 8, 1895..	1·347	0·352	3·8	Negative.	19·775	

Excessive Intestinal Putrefaction in other Pathological Conditions.—Besides the pathological conditions already mentioned, in which excessive intestinal putrefaction has appeared to constitute an important and frequent feature, there are undoubtedly others with which it is often associated, but in which it has not yet been observed with enough frequency and regularity to enable us to say with confidence whether its occurrence is characteristic. Thus Biernacki * has found a marked increase in the ethereal sulphates in catarrhal jaundice, but, though his cases were very carefully studied and gave positive and unequivocal results, they were too few—being only three in number—to enable us to draw any general conclusion. Nevertheless, Biernacki's observations are of sufficient interest for us to briefly review them. In choosing his cases for study he excluded jaundice arising from cirrhosis, cancer of the liver, or from impacted gallstones. He tried also to rule out cases in which intestinal catarrh was present, recognizing that this is apt by itself to increase putrefaction. In the interpretation of his results Biernacki makes due allowance for the influence of different kinds of food—a matter of cardinal importance. His observations relate to the aromatic sulphates; no estimation of indican was made.

Biernacki attributes the increased putrefaction observed largely, but not altogether, to the mechanical holding back of the bile from the gut—the idea being that the bile exerts normally a pronounced antiseptic effect on the intestinal contents. The chief fact which he brings forward in support of the view is that the ethereal sulphates diminished in amount just at the time of beginning convalescence, when the bile pigments disappeared from the urine, and when presumably the bile had begun to find its way once more to the intestine. But while these sulphates are thus reduced, at times abruptly, with the disappearance of the bile pigments from the urine, there still remains an excess of ethereal sulphates until convalescence is completed. This excess, Biernacki thinks, can not be attributed to the absence of the bile from the intestine, but rather to those anomalies of gastric secretion (especially the deficiency in HCl which has been found by some observers in jaundice) which accompany the gastritis which ordinarily coexists with catarrhal jaundice. To what extent the shutting off of the bile is to be regarded as a factor in the production of intestinal putrefaction is not at present clear. What antiseptic action the bile may possess doubtless depends on the free biliary acids. It has no such action in an alkaline medium and little or none in a neutral medium. How much antiseptic action the bile has in an acid medium we do not know. According to Lindberger * and Leubuscher † this action is considerable, but according to Macfadyen, whose experiments were carried out with much care, it is slight. Macfadyen contends that the bile has no specific antiseptic powers, and that such action as it possesses depends on the bile acids and is shared by acid media in general. Von Noorden points out that the quantity of the free bile acids is usually small and that its action may be minimized by the presence of albumin and peptone. He suggests that a much more potent factor in the prevention of putrefaction in the small intestine is to be found in the organic acids that originate in the fermentation of carbohydrates. It is probably safe to conclude that the bile possesses only slight antiseptic properties, and that its influence in controlling putrefaction in the intestine depends largely on its hurrying the passage of food and thus preventing the formation and absorption of aromatic substances. The high ethereal sulphates observed by Biernacki in jaundice were also found by Brieger. ‡ Brieger found no excess of indol, phenol, or skatol, and concludes that there are unknown aromatic substances which combine with sulphuric acid in the organism, and that these are increased in jaundice and perhaps account for the peculiar stink of bile-free fæces.

Müller,# Pott,‖ and von Noorden △ have observed cases of obstructive jaundice in which no increase in the ethereal sulphates could be detected. We also obtained quite negative results in two imperfectly studied cases of catarrhal jaundice.

Senator ◊ was the first to call attention to the fact that in cases of pronounced anæmia the urine generally contains considerable indigo blue. Since this observation, which has been repeatedly confirmed, others have found an increase in the ethereal sulphates in pernicious anæmia, leukæmia, and anæmic conditions generally. Von Noorden and Rethers‡ have observed an increase in the ethereal sulphates in many cases of chlorosis. In eighteen cases of moderate or pronounced anæmia Rethers found no increase

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* *Loc. cit.*, p. 109.

* Abstract in Virchow and Hirsch's *Jahresb.*, 1884, i, p. 141.

† Einfluss von Verdauungssecretion auf Bakterien, *Ztschr. f. klin. Med.*, xvii, 1890, p. 481.

‡ *Ztschr. f. klin. Med.*, 1881, 3, p. 465.

Untersuch. über Ikterus, *Ztschr. f. klin. Med.*, xii, 45, 1887.

‖ Pflüger's *Archiv*, xlvi, 1890, p. 19.

△ *Berlin. klin. Woch.*, 1892.

◊ *Ctrlbl. f. d. med. Wiss.*, 1877, pp. 357, 370, 388.

‡ *Beitr. zur Pathol. der Chlorose*, Diss. Berlin, 1891.

in the ethereal sulphates in nine cases, but in the remaining cases found a considerable though not constant excess. We have had a similar experience with a smaller number of cases of simple anæmia.

These observations are of interest in connection with the view of Sir Andrew Clark * that anæmia results from the absorption from the intestine of substances harmful to the blood that are formed in consequence of intestinal putrefaction. It is clear from Rethers's results that this can not be the manner in which most anæmias are produced, but the possibility remains that some anæmias may arise in that way. But the work done upon the occurrence of excessive intestinal putrefaction in the various blood diseases is at present unsatisfactory, and we can hardly say more than that many anæmias are complicated either continuously or irregularly by intestinal disturbances which vary considerably in different cases and require to be individually studied.

In three cases which were diagnosticated ulcer of the stomach we found regularly very high ethereal sulphates, both relatively and absolutely. One of the cases proved on autopsy to be carcinoma of the stomach. While the results in these cases were striking, they are inconclusive. It is possible that the lack of gastric secretion in both ulcer and cancer of the stomach might account for excessive intestinal putrefaction. Further studies of these conditions are desirable. Our results in two cases are as follows:

CASE I.—J. C., aged nineteen, domestic, single. Family and previous history good. Has not menstruated for two years. Present trouble began about six months ago with pain in epigastrium, headache, palpitation and shortness of breath, and some œdema of extremities. Two weeks ago vomited blood for first and only time. Now complains of much pain in epigastrium, shooting through to small of back, and made worse by eating. Patient is well nourished, very anæmic, tongue is coated; hæmic bruit at base of heart; stomach dilated; extremities slightly œdematous; hæmoglobin, twenty per cent.; stools dark and tarry; weight, a hundred and twenty pounds.

DATE.	Preformed sulphates, gramme.	Combined sulphates, gramme.	Ratio.	Indigo blue.	Urea, grammes.	
Jan. 6, 1893..	1·483	0·233	6·3	Very strong.	18·342	
Jan. 9th.....	1·457	0·357	4·1	Strong.	27·633	
Jan. 10th....	0·583	0·167	3·5	Traces.	15·749	
Jan. 11th....	0·920	0·199	4·6	"	17·765	Improved condition.
Jan. 14th....	0·734	0·212	3·4	Negative.	15·578	
Jan. 30th....	1·097	0·155	7·0	"	15·425	

CASE II.—J. E., aged forty-six, carpenter, married. Family history good. For last four months has had poor appetite and has lost flesh and strength. Pain after eating is a regular occurrence, and there has been occasional vomiting of blood. On admission to hospital patient was extremely anæmic; hæmic bruit over base; hæmoglobin, twenty-two per cent.; red cells, forty-one per cent.; ratio of red and white cells normal. Gunzberg's test shows presence of free HCl in stomach washing after test meal. Stools dark and tarry at first; weight, a hundred and fifty pounds.

Date, Dec. 11, 1892.

Preformed sulphates...............	1·628 gramme.
Combined sulphates................	0·674 "
Ratio.............................	2·4
Indigo blue.......................	Medium.
Urea..............................	28·090 grammes.

In two cases of Basedow's disease decided evidences of excessive intestinal putrefaction were found, and it is not improbable, as pointed out by some authors, notably Thompson, that digestive disorder is usually a factor in the origin of this condition, though our observations prove nothing, as they may be merely due to an accidental association. In both these cases there were no symptoms of disordered digestion of which the patients were conscious.

In one case of cystinuria which we have, through the kindness of Dr. Thacher, had an opportunity of studying with care, there was regularly a considerable increase in the amount of ethereal sulphates excreted, notwithstanding the patient was on a milk diet, this excess disappearing as the patient became convalescent.* This fact is of interest in connection with the view that cystine—a diamine—is a product of intestinal putrefaction. It must be stated, however, that some observers have failed to find in cases of cystinuria any increase in the aromatic sulphates.

It was pointed out many years ago by Senator that in conditions where there is extensive suppuration there is usually to be found a large amount of indican in the urine. Recently Keilman † put forward the view that indican is regularly to be found in the urine whenever abscess formation is taking place, and that the presence of indigo blue under certain conditions may be of much aid in the recognition of obscure abscesses. In several cases the indican disappeared from the urine as soon as the abscess had been opened and drained.

We are unable to offer any criticism on the statement of Keilman that abscess formation is regularly associated with the occurrence of indican in the urine. In two cases of tubercular bone disease, with large, freely suppurating cavities, indigo blue was observed to be of inconstant occurrence in the urine; but we can not admit this fact in evidence here, since in these cases the pus was not confined, but had free exit. We may, however, call attention to the difficulty that must attend the employment of indicanuria in the diagnosis of abscess—a difficulty apparently overlooked by Keilman. This is due to the fact that indican is so frequently present in the urine as a result of intestinal derangements in which symptoms are obscure or absent. Consequently, before referring indigo blue to the putrefactive products formed in abscesses, it would be necessary to rule out with certainty the existence of excessive intestinal putrefaction with the production of indican. It is unnecessary to say that this is usually difficult and often impossible. A similar criticism applies to the use of indican as an evidence of the existence of tuberculosis. Some authors, however, appear to regard the occurrence of considerable indican in the urine in children from one to six years of age as evidence of tuberculosis. Recent observers, especially Steffen and Voute,* have shown that the facts upon which this view is based are themselves open to question, and that indicanuria is no more common in tubercular children than in children without tuberculosis. We shall not enter here into a discussion of the merits of Hochsinger's views upon this question, and shall only point out the fact that the statements already made regarding the origin and nature of indigo blue render it in the highest degree improbable that indigo blue found in the urine of tubercular children is due to the presence of a tubercular process. But we can readily understand how indigo blue in the urine might be of frequent occurrence in tubercular children who have intestinal disorders, and it is conceivable that where a tubercular process has led to extensive suppuration this may contribute to the formation of indican.

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* Anæmia and Chlorosis of Girls. *Lancet*, 1886, ii, p. 1003.

* We have recently found a marked increase of the ethereal sulphates in a second case of cystinuria occurring in a boy aged five years.

† *St. Petersburger med. Wochenschrift*, No. 15, 1893.

It is probably not out of place to note here the behavior of the aromatic substances of the urine during inanition. At first sight it might be supposed that the putrefactive processes in the intestine would be greatly reduced by the absence of proteid material capable of undergoing decomposition. Observation, however, shows that the putrefactive products not merely do not cease to be formed in starvation, but may be actually increased.

The best work that has yet been done upon the ethereal sulphates in starvation is that of Müller,† whose results upon two starving subjects, Cetti and Breithaupt, are given below:

	CETTI.			BREITHAUPT.		
	Preformed sulphates, grammes.	Combined sulphates, gramme.	Ratio.	Preformed sulphates, grammes.	Combined sulphates, gramme.	Ratio.
Second day before experiment	......	......	......	2·586	0·320	8·8
Day before experiment begun	2·790	0·185	14·5	2·606	0·250	10·4
First day without food	2·094	0·060	36·5	2·156	0·398	5·6
Second day	1·777	0·043	40·9	1·800	0·336	5·3
Third day	1·874	0·064	29·3	2·235	0·276	8·1
Fourth day	1·907	0·104	18·3	2·029	0·239	8·5
Fifth day	1·665	0·160	10·4	1·927	0·135	14·2
Sixth day	1·607	0·136	11·8	1·546	0·216	7·1
Seventh day	1·356	0·259	5·2			
Eighth day	1·316	0·267	4·9			
Ninth day	0·851	0·389	2·3			
Tenth day	1·252	0·166	7·4			
First day on food	2·107	0·267	7·8	1·840	0·387	4·8
Second day on food	3·162	0·575	5·5	1·747	0·077	22·7

Thus in the case of Cetti there was a reduction of the ethereal sulphates and a slighter reduction in the preformed sulphates during the first four days. Then, while the preformed sulphates continued to fall gradually, the combined sulphates underwent a marked increase, the ratio the while growing low. On the two days following the resumption of food the preformed sulphates rose to normal and the ethereal sulphates continued excessive. In the case of Breithaupt the results are less striking. There the preformed sulphates underwent less reduction in the starvation period than in the case of Cetti, and the ethereal sulphates did not rise much above the figures of the normal days preceding. Hence the ratios did not fall to the point recorded in Cetti's case.

While it would have been well had both cases been studied for a longer time before and after the period of starvation, these results illustrate well the increase in the products of intestinal putrefaction that may occur. We know of no other observations upon sulphates in starving men. Some results obtained by us in starving rabbits show a close correspondence with the conditions found in Cetti and Breithaupt's cases—namely, a reduction in the preformed sulphates and an increase in the aromatic sulphates. When food was given the ratios returned rapidly to the normal.

As regards the formation of indigo blue during inanition in man there is now little difference of opinion. In the two cases just referred to Müller found that indigo blue was present only in traces during the period of starvation, though it had been present in large amount before, and that it reappeared in increased amount when food was again taken. Tuczek * also found that indigo blue disappeared from the urine of an insane patient who abstained entirely from food. In this case the indigo blue did not return until the fourth day upon food. Luciani, in the case of Succi, observed a reduction in ethereal sulphates to about one third that found on a mixed diet. It thus seems from this rather scanty material that we are likely in starving persons to meet with a reduction or disappearance of indigo blue, and this notwithstanding there may be coincidently an increase in the ethereal sulphates. But it is clear from a case recorded by Müller † that no reduction in indigo blue may occur in starvation if the patient is suffering from gastro-intestinal disease.

In the case of starving animals the results regarding indigo blue are conflicting. Thus Salkowski ‡ found seventeen milligrammes of indigo in the urine of a dog on a meat diet, and only from four to five milligrammes during a period of starvation. In this instance, therefore, there was merely a reduction in indigo blue. Other observers have found that indigo blue may persist in considerable amount during inanition in cats. We have ourselves noted in rabbits the appearance of considerable amounts of indigo blue during starvation (although none had been present previous to the shutting off of food) and its entire disappearance when food was given again.

It would not be unreasonable to expect that in starving men the output of phenol, as phenol-potassium sulphate, should, like indoxyl potassium sulphate, undergo a decrease.

But the observations of Munk,# Müller, ‖ and Senator △

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* Voute. *Revue mens. des maladies de l'enfance.*

† Untersuchungen an zwei hungernden Menschen. *Arch. für pathologische Anatomie und Physiologie*, Band cxxxi, Supplement, p. 128, 1893.

* Stoffwechsel bei abstinirenden Geisteskranken. *Arch. f. Psychiatrie*, 25, p. 784, 1884.

† The case referred to was one of œsophageal stricture following alkali poisoning, in which the digestive tract was also involved.

‡ Ueber die Quelle des Indicans im Harn des Fleischfressers. *Ber. chem. Ges.*, ix, 138, 1876.

# *Loc. cit.* ‖ *Loc. cit.* △ *Loc. cit.*

show that this is by no means the case. The results of Müller in the case of Cetti may probably be regarded as typical. Here there was a reduction in the excretion of phenol during the first day of fasting, followed by a gradually increasing output, until the amount reached a hundred and thirty-seven and a hundred and fifty-five milligrammes on the eighth and ninth days respectively of the fast—that is, from three to seven times as much phenol as is excreted on the average upon a mixed diet.

It is thus probably safe to say that in fasting human beings there is not merely an increase in intestinal putrefaction as expressed by the appearance of the ethereal sulphates in increased amounts, but a change as well in the *nature* of the putrefactive process, as expressed by the decrease of indol formation and the increase in phenol formation. These results, as already intimated, are not what might be expected on a casual view of the origin of the putrefactive processes in the intestine. The increase in the ethereal sulphates in starvation is, however, less surprising when we reflect upon the character of the contents of the intestine during this condition. In addition to the remnants of proteid food which the intestine then contains, there is a rich basis for putrefactive processes in the nucleo-albumins and the mucin of the bile* and of the succus entericus, and in the proteid constituents of the broken-down epithelial lining of the gut. The absence or feeble character of the peristaltic movements during a fast leaves these various contents in a condition favorable to bacterial activity. The deviation from the normal in the nature of the putrefactive processes, which has been referred to, is probably explained by the unusual character of the material which undergoes putrefaction. Why it is phenol which is increased under these circumstances we do not know.

In view of the increase in phenol observed in the fasting state it is of interest to note that such an increase is not, according to Munk,† found in conditions of mere constipation. It is interesting, also, in seeking to explain the fact that putrefaction is increased in starvation, to recall the influence which certain articles of food are supposed to exert normally in inhibiting putrefactive processes. Thus, according to Hirschler,‡ cane sugar, starch, and dextrine, and their derivative, lactic acid, exert some influence of this nature. The same is thought to be true of the glycerin formed in consequence of the proteid decomposition of food.

While it is quite conceivable that these foods exert in a measure the influence ascribed to them, we are in no position to assert that they do.

The view of Ortweiler,# that hæmorrhages into the intestine and other pathological conditions of the gut in starvation may be factors in producing increased putrefaction, can not be denied, but it is unlikely that they are ordinarily factors of importance.

It is important to understand that excessive intestinal putrefaction is sometimes met with in persons who give no symptoms of any kind, or only obscure symptoms, and are to be regarded as normal. We have met with several instances of this kind where the sulphates have been habitually a little high (say about one to eight), and where a moderate amount of indican has been present. Such cases are certainly not common. But how are we to explain the absence of symptoms or their slight character? The explanation lies probably in the fact that certain individuals are so robust in general health and so resistant to the influence of such putrefactive products as are formed in the intestine that such substances cause no appreciable effect. This corresponds with the fact that the individuals in whom we have observed this behavior in the presence of abnormal conditions have been without exception in unusually strong general health. Possibly also in them the disorder has been of short duration. We are therefore not to interpret such cases as evidence that high sulphates and indican are ever to be regarded as normal occurrences, but rather that in some exceptionally robust persons they produce, for a time at least, little or no appreciable effect. An analogous condition is observed in some resistant persons who excrete a considerable excess of uric acid without for a time having any appreciable symptoms. The same degree of excess in less robust persons is regularly associated with distinct symptoms.

In no instance have we met with an absence of symptoms where the amount of indican was regularly large or where the sulphates showed a higher ratio than one to eight or one to seven.

We should mention here the influence of sexual excess in giving rise to excessive intestinal putrefaction. While from the nature of the case it is most difficult to make definite observations upon the influence of sexual excess, there can be no doubt that in many males it increases, at least temporarily, the putrefactive substances formed in the intestine, and that habitual excess is a frequent cause of intestinal indigestion. Many patients with chronic intestinal indigestion notice that after copulation the stools are altered in color and consistence for several days, becoming lighter in color and weight. In some cases indican has been noted temporarily both after copulation and after masturbation. These effects depend probably on the deficiency of the digestive juices after sexual excitement. We are not now in a position to estimate the precise influence of sexual excess under different conditions, but there can be little doubt that it is a factor of much importance in the causation of intestinal indigestion, especially in males. Probably sexual excitement is especially harmful during bodily fatigue and in connection with overeating.

(*To be concluded.*)

An Honorary Degree.—At the last annual commencement of Georgetown University, Washington, D. C., the degree of LL. D. was conferred on Dr. Ernest Laplace, professor of surgery in the Medico-chirurgical College of Philadelphia.

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* In this connection, see the observations of Ernst, which show that aromatic bodies arise from putrefaction of the mucin of the bile. *Loc. cit.*

† *Loc. cit.*, p. 133.

‡ *Zeitschr. f. physiol. Chem.*, Bd. x, p. 306.

Physiol. und pathol. Bedeutung des Harnindicans. *Mitth. aus der Würzb. med. Klinik*, ii, 172, 1885.

CYSTIC TUMORS OF THE VAGINAL VAULT,

*WITH REPORTS OF TWO CASES.**

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Cystic tumors of the anterior vaginal wall which occupy the space between this wall and the inferior wall of the bladder are of interest on account of their rarity. The first case which I shall report this evening is especially so, as it is of that variety which does not communicate with the urethra. Dr. Cullen, of the Johns Hopkins Hospital, found records of only two such cases to April, 1894; while, of the cystic tumors of this region which did communicate with or form a part of the urethra, he found records of thirty-two cases. To this variety my second case belongs:

Case I.—The patient, a prostitute, twenty-six years of age, was admitted to the Penitentiary Hospital, Blackwell's Island, during April, 1894. She stated that just after a miscarriage she first noticed a swelling on the anterior vaginal wall, slightly posterior to the labia minora. Up to that time she had had no pain during micturition or coitus. She stated that she had not to her knowledge received any injury to this part. At the time of admission to the hospital the patient complained of a constant dragging pain and of a profuse leucorrhœa. A vaginal examination revealed a protrusion or prolapse of the anterior vaginal wall, external to the labia. At first it was supposed that the patient was suffering from a cystocele, but her age and previous history led to a closer examination, and a catheter was passed into the bladder. It was found that the tumor, which was about three by two inches, was not connected with that viscus. It was somewhat movable and sessile. Under ether anæsthesia an incision was made along the anterior vaginal wall, starting from a point about an inch below the meatus and extending to the junction of the anterior vaginal wall with the cervix. These flaps were dissected from the tumor. A sound was at this time introduced into the bladder and the thickness of the vesical wall was measured. The separation of the tumor from this wall was not attended with difficulty, although in the course of the dissection the wall of the cyst was ruptured at one point and its contents escaped. It contained about four ounces of a glairy, semitransparent fluid. There was no appearance of pus or blood. The wound was irrigated with a 1-to-4,000 solution of bichloride of mercury, and then with a solution of hydrogen dioxide. The wound was closed with two layers of catgut sutures, deep and superficial, and the wound painted over with a ten-per-cent. solution of iodoform in ether. Union occurred primarily. The specimen was referred to Dr. Edward K. Dunham, of the Carnegie Laboratory, for a histological examination. He reported that the cyst had fibrous walls, and that it was lined with epithelial cells. He writes: "I can not state whether the cyst is congenital or not."

Case II.—This patient was seen by the courtesy of Dr. Charles Phelps, a member of this society, in consultation.

M. W., twenty-three of age, a married woman, gave a good family history. Her health had always been satisfactory. Her first menstruation occurred during her thirteenth year, and it has been painless, regular, and of the monthly type. She was married in November, 1894, and her last menstrual period began on December 5, 1894. Up to March, 1895, nothing unusual was noticed by her about her vagina. Coition and micturition were unattended with pain. She first became aware about this time of a brownish discharge from her vagina, or rather her urethra, and soon after this she noticed a swelling which did not, according to her story, increase in size from the time of its discovery in March till the day of operation, May 14, 1895. When a vaginal examination was made, a tumor on the anterior vaginal wall was found, beginning at the lower margin of the meatus urinarius and extending about an inch and a half along this wall. The tumor was about an inch in breadth. An opening into the urethra was discovered, and the tumor could be partially emptied through this opening. Under ether anæsthesia the sac was excised. Much difficulty was experienced in making this dissection on account of the intimate connection between the walls of the cyst and that of the urethra. After irrigation the wound was closed with catgut sutures, and the patient's urine was drawn by a catheter for several days. Her recovery was uneventful. Unfortunately, in the confusion which followed the operation (it having taken place in a private house), the specimen was lost.

Huguier, Virchow, Guérin, Preuschen, Poupinel, and others believe that these cysts generally derive their origin from glands, and are therefore retention cysts. Eustache, Tillaux, and Thallinger believe that they are hygromata; Viet, that they derive their origin from the terminal extremity of the Wolffian canal, or Gartner's duct. "I believe," says Professor Pozzi, "that all vaginal cysts larger than a walnut are of embryonic origin." Courty thinks excessive coitus is the most frequent cause. Cullen, in his article in the *Johns Hopkins Hospital Bulletin* for April, 1894, thinks that, in addition to the causes already alluded to (embryonic, traumatic, or glandular), we may have a true urethral diverticulum in which all the urethral coats take part; that they may be caused by the dilatation and possibly occlusion of Skene's tubules; that they may be due to the arrest of calculi in the urethra, a diverticulum forming to accommodate the same, or that a suppurating cyst situated in the urethro-vaginal junction may have burst into the urethra.

The cases herewith reported give no history of traumatism, and it seems more probable that they were both cysts of Gartner's duct, and therefore congenital, than that they were glandular in origin, or retention cysts. The fact that the tumors were in both cases first noticed soon after the beginning of pregnancy supports Professor Pozzi's theory that their ætiology may depend on pregnancy, or, in other words, the active increase of the nutrition of the whole generative tract which takes place under such a condition may at times extend to the remains of the duct of Gartner, and the cyst result.

The symptoms which are usually manifest in this condition are painful micturition, and, after the tumor has reached certain proportions, profuse leucorrhœa and prolapse of the anterior vaginal wall, accompanied by a constant dragging pain. The treatment of these neoplasms should generally be their total extirpation. In the second case the severance of the tumor from its urethral attachments would have been facilitated if after the primary incision the sac had been punctured and evacuated and it had been filled with a solution of plaster of Paris or liquid paraffin, as suggested by Pozzi. After the removal of the tumor the wound should be irrigated with a bichloride solution. Hydrogen dioxide should then be applied to control the oozing. Two rows of sutures, preferably of silkworm gut, should be employed to close the wound, which should then be painted over with a ten-per-cent. solution of iodoform in ether. This must be renewed from time to time.

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* Read before the Society of Alumni of Bellevue Hospital, June 5, 1895.

55 West Thirty-sixth Street.

THE ERRORS OF REFRACTION IN A SERIES OF TWO THOUSAND EYES, AND SOME OF THE SYMPTOMS RELATED THERETO.*

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The cases upon which the following paper is based were seen in private practice between April 22, 1893, and January 22, 1895. No selection has been made, the cases being taken as they came, with the exception of those having corneal or lenticular opacity, or disease at the fundus sufficient to interfere with the proper estimation of the refraction.

The examinations and records were made with a considerable degree of uniformity, both as regards practical methods and the working theories underlying them. When the cases were seen and recorded, there was no thought of tabulating them, and the records are consequently in some respects less complete than they otherwise would have been.

With very few exceptions each case was examined twice. In the great majority of cases a mydriatic was used previous to the second examination, a complete paralysis of the accommodation being produced.

Thus, hydrobromide of homatropine (in solution, gr. viii ad ℥ j) was used in 1,512 eyes or in 756 cases, sulphate of atropine in 148 eyes or in 74 cases, and in 20 cases the use of homatropine was followed by the prolonged use of atropine, on account of persistent spasm of the accommodation.

Beyond the very occasional occurrence of transient symptoms of atropine poisoning, nothing but the temporary inconvenience of accommodative paralysis can be set down against the use of these drugs.

The examinations were made with the ophthalmometer of Javal, followed by subjective tests with test types and lenses, with the ophthalmoscope, and in a certain number of cases the shadow test was used—the most accurate of all objective methods for the estimation of refractive errors. In the cases of a few young children the latter method had to be relied upon exclusively.

The ophthalmometer was used in almost every case. In rare cases only did the corneal astigmatism prove to be the only astigmatism present, in the vast majority there being a difference between the findings of the instrument and the total astigmatism, a difference which in one case amounted to 3 D.

The constancy with which a difference between the corneal and total astigmatism is found shows that some lenticular astigmatism is almost invariable, although usually of low degree.

I omitted to make any tabulation of the cases in this respect, but the impression gained from my total experience with the ophthalmometer so far is that, while moderate and high degrees of astigmatism are mainly corneal, astigmatism of some degree (usually low) is present more frequently in the lens than in the cornea. In other words, the cases in which no corneal astigmatism exists are commoner than those in which there is no difference between the corneal and the total astigmatism—no lenticular astigmatism.

The principal meridians of the corneal astigmatism correspond usually with those of the total astigmatism in the higher degrees. In the lower degrees there may be, and commonly is, much difference. Indeed, in cases of corneal astigmatism of 0·25 D. or 0·5 D. *with the rule*, the principal meridians of the total are often placed near 45° and 135°, or even *against the rule*.

On the whole the instrument probably saves no time. In a minority of cases it gives a very useful indication of the direction in which to begin work. But in the majority it affords no information beyond the fact that there is a certain small amount of corneal astigmatism, which is of interest, but, as it bears no constant relation to the total astigmatism, practically valueless. In children it is less useful than in adults, on account of the greater difficulty in obtaining the necessary steady fixation.

Sex.—Three hundred and fifty-nine of the patients were males and six hundred and forty-one females, or thirty-six per cent. male and sixty-four per cent. female.

Age.—Sixty of the patients were in the first decade of life, 212 in the second, 275 in the third, 201 in the fourth, 138 in the fifth, 80 in the sixth, and 34 were above sixty years of age.

About fifty per cent. then came under observation between the ages of ten and thirty. Although this corresponds with the observation of others, it is by no means a sure indication of the time of onset of the symptoms of eye-strain, for these have commonly existed for years before the patient has come under observation.

Statistics derived from hospital or dispensary reports bearing on the relative frequency of the different forms of refractive error are, I believe, extremely misleading, in the direction chiefly of making astigmatism much rarer, simple hypermetropia commoner, and simple myopia infinitely commoner than either really is. There seems reason, indeed, to doubt the existence of a simple uncomplicated myopia—*i. e.*, a myopia without astigmatism, anisometropia, or heterophoria.

The differences between hospital and private statistics depend doubtless on the different degrees of intelligence in the two classes of patients, on the greater amount of time which is expended in private practice on these cases, and on the fact that in hospital practice they are often relegated to the less experienced members of the staff and to students.

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* Read, in part, before the Syracuse Academy of Medicine, May 7, 1895.

The following table presents a comparison between hospital and private statistics as to the grosser facts. The institutions named were selected for the reason that their reports were ready at hand.

It has been assumed that the cases placed under the head of astigmatism included all varieties and degrees of astigmatism, that those under the heading of hypermetropia were cases of simple hypermetropia, and similarly with myopia.

	Total number of cases.	Cases of astigmatism.	Per cent. of total.	Simple hypermetropia.	Per cent. of total.	Simple myopia.	Per cent. of total.	Emmetropia.	Per cent. of total.
Mass. Char. Eye and Ear Inf., 1891 and 1893. N. Y. Ophthal. and Aural Inst., 1890 and 1893. Newark Eye and Ear Inf., 1890, 1891, and 1893. Brooklyn *ditto*.	9,487	3,130	34·0	4,557	49·0	1,412	15	173	0·2
This series.......	1,000	919	91·9	79	7·9	1	0·1	1	0·1

While cases of astigmatism are nearly three times as common in private practice as in hospital statistics, simple hypermetropia is more than six times and simple myopia one hundred and fifty times commoner in the latter than in the former.

The following tables show the distribution of this series of two thousand eyes among the different forms of refraction:

Hypermetropia.

	Eyes.	Per cent. of hypermetropia.	Per cent. of all.
Simple hypermetropia................	229	16·0	11·4
Simple hypermetropic astigmatism......	308	21·5	15·0
Compound hypermetropic astigmatism ..	891	62·5	45·0
Total hypermetropia.............	1,428	100·0	71·4

Myopia.

	Eyes.	Per cent. of myopia.	Per cent. of all.
Simple myopia......................	19	3·5	1·9
Simple myopic astigmatism............	156	28·5	7·8
Compound myopic astigmatism.........	252	46·0	12·6
Mixed astigmatism...................	122	22·0	6·1
Total myopia.....................	549	100·0	27·4
Emmetropia.	23	....	1·2

By adding together the numbers of astigmatic eyes in the above tables we find that in 1,722 of the 1,977 hypermetropic or myopic eyes there was astigmatism in addition to hypermetropia or myopia. Astigmatism, then, was present in eighty-six per cent. of the total number, and consequently is the commonest of all errors of refraction, hypermetropia coming next with 71·4 per cent.

If we reckon by patients instead of by eyes, we find that 919 out of the 1,000, or practically ninety-two per cent., had some astigmatism in one or both eyes; about seventy-five per cent. were hypermetropic, twenty-five per cent. myopic, and only one patient, or one tenth of one per cent. of the whole number, was free from refractive error in both eyes.

Of 1,428 hypermetropic eyes, 229, or sixteen per cent., had no astigmatism (or less than 0·25 D.); whereas, of the 549 myopic eyes, only 19, or 3·5 per cent., were free from astigmatism. That is to say, that among hypermetropic eyes simple hypermetropia is four and a half times commoner than simple myopia among myopic eyes.

If we reckon again by patients instead of by eyes, the contrast between the relative frequency of simple hypermetropia and simple myopia is still more striking.

Thus, simple hypermetropia constitutes about nine per cent. of the farsighted, and simple myopia a little more than a third of one per cent. of the nearsighted; or simple hypermetropia is about twenty-five times as common among the farsighted as simple myopia among the nearsighted. While astigmatism is very frequently found in hypermetropes, its presence is all but invariable among myopes.

Now, when it is taken into consideration that the eye is almost always hypermetropic at birth and for some time afterward, and that myopia is an acquired condition or pathological process, developing in a certain number of these originally hypermetropic eyes, the fact that those individuals in whom one or both eyes are astigmatic are practically exclusively selected has great significance. It becomes evident that the subjects of simple hypermetropia have but little tendency to become myopic, and it seems highly probable that the presence of astigmatism is an important factor in the causation of myopia.

Glasses of different strength for the two eyes were required in 716 cases, or in over seventy-one per cent., and if a difference in the position of the axis is taken into consideration, the percentage of asymmetry rises still higher, for, of 452 cases, there was an unsymmetrical relation of the axes in over sixty-six per cent. Among the hypermetropes there was unequal refraction in about seventy per cent. of the cases, whereas in myopes it was present in about seventy-four per cent. Individuals whose refraction is dissimilar in the two eyes are, then, presumably somewhat more prone to become myopic. (In this paper a difference in refraction amounting to 0·25 D. is taken into account. If the higher degrees of anisometropia alone were considered, a larger proportion still would probably be found among the myopes.)

There is one other form of congenital anomaly which is found in a large number of cases of myopia—namely, a faulty condition of muscular equilibrium. Some form of heterophoria was present in 117 of the cases of myopia. An impression gained from the study of individual cases that these errors play an important part in producing myopia is scarcely borne out by the statistics as a whole, which give the percentage of heterophoria in myopes as somewhat less than that in the whole series. When, however, only those cases are taken into consideration in which the heterophoria has been thought worthy of correction, the situation changes. Thus, a correction for latent deviation was prescribed in thirty per cent. of the cases of myopia, in nineteen per cent. of other forms of refraction, and in twenty-two per cent. of the whole number of cases.

In other words, it was necessary to correct heterophoria in myopia in over fifty per cent. more cases than in other forms of refraction.

To summarize briefly:

In myopia we find astigmatism, anisometropia, and heterophoria more frequently than in other forms of ametropia; and, since the myopia has developed in eyes originally hypermetropic, the myopic process has evidently selected those individuals in whom astigmatism, anisometropia, and heterophoria were present, and consequently we find in cases of myopia two groups of conditions:

1. A congenital group, consisting of one or more of the three previously mentioned anomalies, and
2. An acquired group—the pathological elongation of the eyeball characteristic of the myopic eye, and the changes secondary to it.

I believe it is not far from the truth to say that the second group is the result of the first, plus, in some cases, certain defective hygienic conditions.

In the 245 cases of myopia occurring in this series there is no case in which one or more of these congenital defects is not present, and if these cases fairly typify the conditions found in myopia, and I believe they do, it means that ordinary nearsighted glasses—concave spherical lenses—of equal strength for the two eyes are practically never correct, and since this generalization has formed in my mind I have looked in vain for a case of simple uncomplicated myopia. The bearing of this upon practice is important, for experience is beginning to show that when these congenital defects are corrected the myopia ceases to progress, and that when they are uncorrected, and concave spherical glasses simply prescribed, the myopia tends to be progressive; and there is little doubt that the careful correction of these errors in children now just beginning will bear fruit in a great diminution in the percentage of the nearsighted in the next generation.

Astigmatism.—No case of astigmatism is recorded in this paper of less degree than 0·25 D. Although it is probable that an error of 0·125 D. produces in some persons annoying symptoms, its importance is not yet generally acknowledged, and consequently cases of this degree have been classed as simple hypermetropia or myopia.

In the majority of cases the astigmatism did not exceed 0·5 D.; in no case did it exceed 6 D.

The following table shows the distribution of all the astigmatic eyes into four groups according to the degree of error:

	NUMBER OF EYES.			Per cent. of all astigmatic eyes.
	Right	Left.	Total.	
Astigmatism = 0·25 D. to 0·5 D....	584	558	1,142	66⅓
0·75 D. to 1 D....................	165	152	317	18⅓
1·25 D. to 2 D....................	64	81	145	8⅓
2·25 D. and upward...............	54	64	118	7
Total........................	867	855	1,722	100

The next table shows the direction of the axis:

	Eyes.	Per cent. of astigmatic eyes.
With rule..................................	1,196	69·5
Against rule................................	464	27·0
Axis at 45° or 135°........................	62	3·5
Axis oblique, *i. e.*, at least 5° from vertical or horizontal..............................	1,329	77·0
Axis exactly vertical or horizontal............	393	23·0

An analysis of the cases shows that the influence of the lower degrees of astigmatism in the production of asthenopia and allied symptoms is at least as great as (really somewhat greater than) that of the higher degrees.

The next table shows the relative frequency of some of the symptoms in the four groups of astigmatic cases:

DEGREE OF ASTIGMATISM.	Number of cases.	Headache.	Per cent.	Megrim.	Per cent.	Vertigo.	Per cent.	Photophobia.	Per cent.	Defective vision.	Per cent.
0·25 to 0·5 D...	558	415	74·5	118	21	184	33	285	51·0	251	45
0·75 to 1 D.....	175	117	67·0	37	21	38	21	76	43·0	87	50
1·25 to 2 D.....	102	67	66·0	14	13	27	26	44	43·0	70	70
2·25 and upward	80	52	65·0	14	17	14	17	34	42·5	68	85

It will be observed that as the percentage of defective vision rises that of headache and the other symptoms falls.

External Ocular Muscles.—There was an apparently normal equilibrium in 453 cases. A latent deviation was demonstrated in 494. A manifest strabismus was present in 28, and in the remaining 25 cases no record was made.

The following table shows the distribution of the various forms of heterophoria in the different kinds of refraction:

	Total.	In myopia and mixed astigmatism.	Per cent. in myopia, etc.	In hypermetropia (all forms).	Per cent. in hypermetropia.
Esophoria.........	193	46	17	147	20
Exophoria.........	169	57	21	112	15
Hyperphoria.......	207	74	27	133	18

Owing to the fact that most of the cases of hyperphoria were complicated by the presence of a lateral deviating tendency, and consequently appear twice, the number of cases of heterophoria appears to be exaggerated in this table.

Esophoria, then, appears to be a little, and only a little, commoner in hypermetropic than in myopic individuals. Probably in a number of these cases the relaxation of the accommodation following the correction of the refraction has been accompanied by a diminution in the degree of, or by a complete abolition of the esophoria, and even in some cases by the development or manifestation of an exophoria.

It certainly is a common experience to find some time after the full correction of hypermetropia or hypermetropic astigmatism that a latent divergence exists, whereas at the primary examinations no such deviating tendency could be demonstrated, or even a low degree of esophoria was present. These statistics mainly are derived from the primary examinations, as only a small percentage of the patients have come back for subsequent examination, and consequently represent a slightly too large percentage of esophoria in hypermetropia.

Exophoria and hyperphoria are distinctly commoner in myopes than in hypermetropes. Not, however, I believe, because myopia has any influence in producing them, but rather because, as previously suggested, their presence constitutes a predisposition to the onset of the myopic process.

In 219 cases, or in twenty-two per cent. of the whole number, a prismatic correction was prescribed.

Tenotomies were performed in ten cases.

Symptoms.—The commonest symptom, as might be expected, was an inability to use the eyes for near work for an ordinary length of time—asthenopia. This occurred in 810 out of the 1,000 cases.

The next symptom in order of frequency is headache, which was present in 755 cases, or in over seventy-five per cent. This occurs in every degree of intensity, from a slight dull aching or sense of pressure to the severest paroxysmal pain, requiring the administration of a general anæsthetic for its control. So far as intensity of pain is concerned, there is no degree which may not be the result of eye-strain.

Although in cases of headache from eye-strain the presence of asthenopic symptoms is the rule, there are many exceptions. Thus, in 113 of the 755 cases of headache, or in about fifteen per cent., no symptoms of asthenopia were present. This fact is of interest in connection with the statements made and opinions expressed by some ophthalmologists that eye-strain does not give rise to headache and the more unusual and remote functional disturbances without causing at the same time symptoms involving the eyes themselves—opinions certainly very widely at variance with the facts. So far from being the necessary accompaniment of headache, etc., the onset of local ocular symptoms often seems to be the occasion for the more remote symptoms to diminish or cease entirely. Every ophthalmologist must be familiar with cases in which the patient, the subject of headache or other functional neurosis, has experienced no difficulty in the prolonged use of the eyes until some definite period of life when asthenopic symptoms have developed, and coincidently the headaches or other nervous symptoms have diminished or come to an end.

The next table shows the relative frequency with which the different parts of the head are the subjects of pain. Here again the numbers in the table are somewhat too large, on account of some cases appearing under more than one heading:

LOCATION.	Total number of cases.	Limited to this region.	Commencing in this region and extending to other parts.	Affecting this region secondarily.
Frontal	381	208	110	63
Temporal	158	58	50	50
Occipital	199	50	38	111
Orbital	121	43	40	38
Cervical ("back of neck")	79	23	6	50
Vertical	98	49	..	49
General	17	..	..	..
Unstated	63	..	..	..

Time of Onset.—This was noted in 480 cases, and was as follows: In 216, on waking from sleep; in 29, soon after rising; in 102, during the latter part of the day; in 80, after use of the eyes, and in 53, at any time.

The statement has been made recently in more than one journal that the onset of headache on waking is characteristic of that due to intranasal pressure, in contradistinction to that arising from eye-strain. It may be true that the headache of intranasal pressure tends to commence on waking. It is certainly not true that this tendency is of any value in distinguishing it from that due to eye-strain.

It has been thought by some that the headache due to refractive error is more apt to be frontal, and that produced by external muscular error occipital in location.

It must be confessed that on account of the almost invariable commingling of the two classes of errors their relative influence in this regard is very difficult to ascertain. There is no doubt, however, that astigmatism may be the cause of occipital or cervical headache, and that heterophoria may cause frontal headache. The impression gained from the study of these and other cases is that the location of the headache is determined by some individual and undeterminable peculiarity in the patient—by idiosyncrasy—and bears no definite relation to the kind of ocular error present.

So far as it goes, however, the present series of cases shows evidence in favor of the idea that frontal headache is more associated with refractive error and occipital with external muscular error.

There is a higher percentage of simple hypermetropia and astigmatism of all kinds in the cases of frontal headache than in the occipital cases, and a decidedly higher percentage of heterophoria (all forms) in occipital than in frontal headache. To this general statement there is this exception, that esophoria is a trifle more frequent in the frontal than in the occipital cases.

The following table gives the actual figures:

	SIMPLE HY.		ASTIGMATISM.		HETEROPHORIA.		EXOPHORIA.		ESOPHORIA.		HYPERPHORIA.	
	Cases.	Per ct.	Cases.	Per ct.	Cases.	Per ct.	Cases.	Per ct.	Cases.	Per ct.	Cases.	Per ct.
Frontal headache, 318 cases	21	6·5	301	94	159	50·0	46	15·0	61	19	52	16·0
Occipital headache, 88 cases.	3	3·5	80	91	62	70·5	22	25·5	16	18	24	26·5

Of the 755 cases the headache was accompanied by nausea or vomiting, and described as a "sick headache," in 187 cases.

The remaining symptoms which were taken into account in the tabulation of the cases are stated below in the order of frequency:

Intolerance of light in greater or less degree occurred in 488 cases, or in about forty-nine per cent.

Defective vision was complained of or admitted in 482 cases, or in forty-eight per cent.; but in the majority of cases amounted to only occasional blurring.

Vertigo, varying much in frequency and degree, was a symptom in 290 cases, or in twenty-nine per cent.

Lacrymation occurred in 280 cases, or in twenty-eight per cent.

Diplopia was complained of in 81 cases, or eight per cent.

Mental symptoms, such as depression of spirits, confusion of thought, nervousness, irritability of temper, etc., occurred in 71 cases, or in seven per cent.

Insomnia was present in 63 cases, or over six per cent.

Nausea, independent of headache, occurred as a direct result of eye-strain in 20 cases, or in two per cent.

Epilepsy, in 15 cases.

Chorea, in 5 cases.

Conjunctivitis and Meibomian tumors, in 51 cases.

Blepharitis, in 18 cases.

In conclusion, there are some symptoms the connection of which with eye-strain is not recognized until the correction of the latter has relieved or modified them. Foremost among these is an interference with general nutrition. It is a common experience to see a marked gain in flesh, coupled with improvement in general health, follow the relief of any form of eye-strain. The symptoms of nervous dyspepsia frequently disappear under similar conditions. The dependence of chronic dyspepsia, finally, upon eye-strain is, I believe, far more frequent than is commonly supposed.

It is not contended, however, that there is any direct connection between eye-strain and any of the remote or general nervous symptoms previously detailed. These symptoms are in the majority of cases not the result of reflex action; but it seems probable that the excessive expenditure of nervous energy to maintain clear and single vision, necessitated by the presence of refractive and muscular errors, results in a state of neurasthenia the symptoms of which vary with the idiosyncrasy, age, condition, mode of life, etc., of the patient. The refractive and muscular errors constitute a leak through which the reserve of nervous energy is lost. Without their correction the maintenance or recovery of good health is for many people impossible. As an example of the unusual symptoms which may result from neurasthenia thus induced, the following case is related:

In October, 1893, I examined the eyes of Mrs. L. I. F., who complained of nearsightedness, much headache, difficulty in seeing, even with her glasses, and a tendency to keep one eye closed.

She was wearing concave spherical glasses, 9·5 D. for the right eye and 10 D. for the left, prescribed for her some years previously by a well-known New York homœopathic oculist.

Examination showed in the right eye a myopia of 15 D. and astigmatism of 2·25 D.; in the left, myopia of 10 D. and astigmatism of 2 25 D.; a latent divergence of five or six degrees, and hyperphoria of four degrees. Glasses correcting the whole of the astigmatism and myopia and the greater part of the heterophoria gave her, after a day or two of discomfort, constant binocular single vision, which she had previously enjoyed only intermittently and imperfectly.

She recently reported to me that she has been perfectly comfortable with the glasses ever since, her headaches and ocular symptoms having ceased, and made the following statement: That for the two years preceding the time of examination she had been suffering from attacks of asthma of increasing frequency, finally occurring once in two weeks, and from a cough, which, intermittent at first, had become chronic for some months, and from loss of flesh. Since the change of glasses there has been no attack of asthma and the cough has completely ceased; she has gained flesh, and is in the enjoyment of perfect health. She attributes the change in her condition solely to the relief of eye-strain.

401 MONTGOMERY STREET.

THYREOTOMY FOR EPITHELIOMA.*

BY W. PEYRE PORCHER, M. D.,

CHARLESTON, S. C.

MRS. G., aged twenty-nine years, mother of four children, youngest born in December last, came to me in March with a history of having caught cold in October, which was followed by hoarseness, sore throat, and slight cough when lying down. Six years ago she had spit up a few mouthfuls of blood, but has had no hæmorrhage since, except slight discolorations of her sputa. She has had no diarrhœa at any time. She now has occasional paroxysms of cough, slight night sweats at times, and profuse expectoration of a muco-purulent homogeneous character, without any nummulated lumps.

The left arytænoid prominence is quite swollen and there is an ulcerated spot which has evidently bled a little at times. Lower down, and apparently about over the left ventricular space, a tumor is seen, which resembles very much an everted ventricle. The mucous membrane on both sides of the larynx is red and swollen. She is almost completely aphonic, but can speak in a low whisper. She has no pain, has a good complexion, good appetite, and sleeps well.

The limited amount of cough, unilateral character of the ulceration, presence of the tumor, and good complexion caused me to think that the disease was malignant and not tubercular. Specimens of the growth and sputa were submitted to a microscopist and the tumor was pronounced to be an epithelioma.

It was therefore decided, as advised by some authorities, and in order to avoid giving chloroform twice, to do a tracheotomy and thyreotomy at the same time.

This was accordingly done, with the intention of scraping away as much of the diseased tissue as possible without doing a partial or complete laryngectomy.

A Gerster's tampon cannula was inserted in place of the ordinary tracheotomy tube to prevent the blood from passing down into the trachea. The bulbous part of the tube in this instrument is distended by means of concealed springs in place of air or water, as in the Trendelenburg instrument, and hence it is very difficult to determine when a sufficient amount of pressure is exerted to cause it to completely occlude the trachea, as the distention produced by springs is much more irregular than that produced by water or air. Tracheotomy was safely performed, and I had just completed the thyreotomy and was in the act of curetting away the tumor when the patient became cyanotic, and, as it was impossible to tell whether this was due to chloroform narcosis or to blood in the trachea, the operation had to be abruptly discontinued. Fortunately, the patient rallied promptly, and the wounds were left open and a large piece of iodoform gauze was stuffed in the trachea through the thyreotomy incision, to prevent further absorption of blood in the trachea.

The patient spent a good night, and the day following the tension was relaxed in the tampon cannula. In a short while the packing inserted above the tube was coughed out through the mouth.

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* Read before the South Carolina Medical Association, April 25, 1895.

On the third day the irritation and cough from the presence of the cannula became so great that the temperature ran up to 102°. The cannula was therefore at once removed and replaced by a large-sized tracheotomy tube. The temperature immediately fell to normal, and on the fifth day the thyreotomy incision was again opened up under the influence of a twenty-per-cent. solution of cocaine, and the larynx curetted out as thoroughly as possible.

There was no reactionary fever or marked discomfort from this operation, and the wound was closed with strips of adhesive plaster. On the sixth day, the hard-rubber tube becoming annoying and inefficient from difficulty in retaining it in position, it was replaced by a piece of soft-rubber tube held in position by a safety pin. On the tenth day, the patient's condition being so favorable, this tube was also removed, and the tracheotomy wound entirely closed with adhesive plaster.

To-day, the twentieth day since the operation, the patient goes home with both wounds closed, but little cough, no pain, and strength fairly good. Her larynx is insufflated daily with a mixture of iodoform, morphine, and tannin, which exerts a marked effect in diminishing the secretion and controlling cough and irritation.

She has taken no internal treatment except some nuclein tablets which I am allowing her to take for their moral and perhaps therapeutical effect.

The lessons which we learn from this case are as follows: Thyreotomy and tracheotomy should always be done with an interval of several days between them—first, to allow the patient to become accustomed to the tracheotomy tube, and, second, to guard against the passage of blood down into the trachea and subsequent pneumonia.

If a tampon cannula is used, a tube should be selected without any concealed springs or other obstruction which might become clogged with inspissated mucus, blood, etc., and it should be long enough and light enough to permit free respiration and not to produce sufficient irritation to set up violent paroxysms of cough.

In the low tracheotomy operation the hard-rubber tube was found to be barely long enough to enter the trachea by a quarter of an inch. The fenestrated opening did not reach the trachea by a full inch, although the tube used was one of the largest if not the largest one made. An appliance would therefore have to be constructed which would keep the edges of the outer wound retracted, as the trachea itself has but little vitality and unites very slowly if at all.

N. B.—Since writing the above the patient's family physician writes me that she has gained flesh and strength. The external wounds have entirely healed. The radical operation may have to be resorted to later, as she still has rather profuse expectoration in spite of the morphine and tannin insufflation. The nuclein has not had any noticeable effect on her.

38 Meeting Street, Charleston, S. C.

The Brooklyn Medical Society was organized in December, 1894, and incorporated on June 12, 1895. Dr. Albert H. Brundage is the president, and Dr. C. D. Kevin the secretary. At the next meeting, on Friday evening, the 19th inst., Dr. J. H. Droge is to read a paper on Diphtheria.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JULY 13, 1895.

NEW YORK AS A MEDICAL CENTRE.

An event has lately occurred that seems to emphasize the general recognition of the supremacy of New York among the so-called medical centres of America. We refer to the transfer of the *Medical and Surgical Reporter*, a long-established and prosperous weekly journal, from Philadelphia to New York. It has happened more than once that the seat of publication of a medical journal has undergone a like change without any such significance; for example, the *Archives of Dermatology* was started in New York and afterward published in Philadelphia, the *Therapeutic Gazette* was transferred from Philadelphia to Detroit, and the *Medical Review* went from Chicago to St. Louis. In all these instances, however, the transfer did not involve the question of the superiority of one city over another as a publishing point, but was due to a change of ownership or to some consideration affecting only the particular publication concerned and not recognized as of general applicability. The only other instance that we now recall which seemed to have the same significance happened a number of years ago when the late Dr. Gaillard took his *Richmond and Louisville Medical Journal* to New York and changed its name to *Gaillard's Medical Journal*, a title under which it seems to have flourished and to be destined to a long career of usefulness and prosperity. We do not understand that the *Medical and Surgical Reporter* has passed into new hands, whether editorial or proprietary; it has simply come to New York, as is distinctly avowed in its own columns, because those who conduct it have come to the conclusion that New York is a better place than Philadelphia as the seat of publication of a journal of its kind. The *Reporter's* statement of its convictions as to this matter is very pointed and does not admit of the slightest doubt. We are sure that the *Reporter* is right, and we welcome it to New York.

It is probably not solely by reason of its greater populousness that New York has become the acknowledged centre of American medicine. Philadelphia held that position for many years after New York had outstripped her in population, and Chicago has not yet crowded Philadelphia down into the third place in medical importance as she has in the census. There must be other features of the commercial metropolis besides her superiority in population that have helped to make New York the leading city of the country in medicine; perhaps one of them is the livelier competition that goes on here between individual members of the medical profession, inciting them constantly to their best work. Whatever the reasons may be, we may be confident that New York will not allow herself to assume that her supremacy can be held without continued effort; her work must still go on with ardor, and we trust that she will always be in close touch with the communities that are only a little behind her and constantly treading on her heels.

MINOR PARAGRAPHS.

THE ALBANY MEDICAL COLLEGE.

This institution, the medical department of Union University, although it has not the clinical resources of a great city, is exceedingly active and progressive. Fresh evidence of this is shown in the *Proceedings* of the twenty-second annual meeting of the association of its alumni, held on April 16th. The pamphlet contains the address of welcome, by Dr. John M. Bigelow, of the faculty; an address by the president of the university, the Rev. Dr. Van Vranken; a report by the historian, Dr. E. A. Bartlett, of the class of 1879; a lecture on The Antitoxic and Microbicide Powers of the Blood Serum after Immunization, with Special Reference to Diphtheria, by Dr. Theobald Smith, of Washington, of the class of 1883; and accounts of the commencement exercises and of the banquet. It is all very interesting matter.

THE THIRD INTERNATIONAL CONGRESS OF PHYSIOLOGISTS.

This congress, which is to hold a five days' meeting in Bern, beginning on September 9th, promises to continue the exemplification made at the previous meetings of its value to the study and progress of physiology. We are asked to announce that American physiologists who intend to make communications to the congress may send the titles to Mr. Frederic S. Lee, secretary of the American Physiological Society, Columbia College, Department of Physiology, College of Physicians and Surgeons, No. 437 West Fifty-ninth Street, New York.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 9, 1895:

DISEASES.	Week ending July 2.		Week ending July 9.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	7	2	21	1
Scarlet fever	42	7	46	3
Cerebro-spinal meningitis	0	1	0	1
Measles	237	11	219	25
Diphtheria	216	42	182	34
Small-pox	0	0	0	0
Tuberculosis	97	75	161	107

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Fifteen Days ending June 30, 1895:*

Purviance, George, Surgeon. To proceed to Delaware Breakwater Quarantine as inspector. June 19, 1895.

Godfrey, John, Surgeon. Detailed as chairman of board for physical examination of candidates for Revenue-Cutter Service. June 17, 1895.

Irwin, Fairfax, Surgeon. Detailed as chairman of board to consider necropsy reports. June 15, 1895.

Carter, H. R., Surgeon. Granted leave of absence for fifteen days. June 24, 1895.

Banks, C. E., Passed Assistant Surgeon. Detailed as member of board to consider necropsy reports. June 15, 1895. Detailed as chairman of board for physical examination of candidates for Revenue-Cutter Service. June 19, 1895. Detailed as chairman of board for physical examination of officers for Revenue-Cutter Service. June 27, 1895.

Kinyoun, J. J., Passed Assistant Surgeon. Detailed as member of board to consider necropsy reports. June 15, 1895.

Young, G. B., Passed Assistant Surgeon. Granted leave of absence for thirty days. June 19, 1895.

Brown, B. W., Passed Assistant Surgeon. Detailed as recorder of board for physical examination of officers for Revenue-Cutter Service. June 27, 1895.

Rosenau, M. J., Passed Assistant Surgeon. Detailed as recorder of board to consider necropsy reports. June 19, 1895.

Nydegger, J. A., Assistant Surgeon. Granted leave of absence for five days. June 19, 1895.

Stewart, W. J. S., Assistant Surgeon. Detailed as recorder of board for physical examination of candidates for Revenue-Cutter Service. June 19, 1895.

Blue, Rupert, Assistant Surgeon. Detailed as recorder of board for physical examination of candidates for Revenue-Cutter Service. June 17, 1895.

Prochazka, Emil, Assistant Surgeon. Granted leave of absence for twenty-six days. June 27, 1895.

Society Meetings for the Coming Week:

Monday, *July 15th:* Hartford, Conn., Medical Society; Chicago Medical Society; Cleveland, O., Society of the Medical Sciences.

Tuesday, *July 16th:* Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Kings, Otsego (annual—Cooperstown), and Putnam (annual), N. Y.; Baltimore Academy of Medicine.

Wednesday, *July 17th:* New Jersey Academy of Medicine (Newark).

Thursday, *July 18th:* Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *July 19th:* Brooklyn Medical Society.

Saturday, *July 20th:* Clinical Society of the New York Postgraduate Medical School and Hospital.

Births, Marriages, and Deaths.

Married.

Jones—Hoober.—In New Albany, Ind., on Thursday, June 13th, Dr. Fred M. Jones, of Evansville, Ind., and Miss Lillie M. Hoober, of Louisville.

Pettus—Peter.—In Charleston, S. C., on Thursday, June 27th, Dr. William J. Pettus, of the Marine-Hospital Service, and Miss Daisy Caden Peter, of Texas.

Phelps—Bedell.—In New York, on Wednesday, July 3d, Dr. Abel Mix Phelps and Miss Cornelia Baker Bedell, daughter of Mrs. James Hall Bedell.

Wilcox—Weeks.—In New York, on Wednesday, June 5th, Dr. Reynolds Webb Wilcox and Miss Frances Maud Weeks.

Died.

Cowan.—In Ashland, Ohio, on Monday, July 8th, Dr. J. P. Cowan, aged seventy-two years.

Gillette.—In De Ruyter, N. Y., on Monday, July 1st, Dr. Fidelio B. Gillette, of Brooklyn, in his sixty-first year.

Grinnell.—In Milford, Conn., on Wednesday, July 10th, Mrs. Natalie Baldwin Grinnell, wife of Dr. Morton Grinnell, of New York.

Hagan.—In New York, on Wednesday, July 3d, Mrs. Lillian Hagan, wife of Dr. Hugh H. Hagan.

Palmer.—In Louisville, on Friday, July 5th, Dr. Edward R. Palmer, in his fifty-third year.

Williams.—In Boston, on Friday, June 14th, Dr. Henry W. Williams, aged seventy-three years.

Obituaries.

EDWARD R. PALMER, M. D., OF LOUISVILLE.

The story of Dr. Palmer's sudden death by violence comes as a terrible shock to the multitude that loved him. On the evening of Friday, the 5th inst., he was returning on a bicycle from a "spin" on the boulevard of Louisville, when, as is supposed, his tire received a puncture that rendered the machine unmanageable, so that, while still in rapid motion, it suddenly veered over to the left, came into collision with another bicycle, and hurled Dr. Palmer headlong against the curbstone. The rider of the other bicycle also was thrown and rendered unconscious for a few minutes. On his regaining his senses he perceived Dr. Palmer stretched out motionless and bleeding. He called for assistance, and it was soon forthcoming. An ambulance wagon was procured with hardly any delay, and the doctor was taken to the Norton Infirmary, where it was found that he had sustained a fracture of the base of the skull. He died in less than an hour after his reaching the infirmary, without having regained consciousness.

Edward Rush Palmer was born in Woodstock, Vermont, on November 18, 1842. He was the only son of Dr. Benjamin Rush Palmer, who, when Edward was eight years old, accepted the chair of surgery in the medical department of the University of Louisville, and took his family to live in that city. Young Palmer left school at an early age, without taking time for a university course in the arts, so eager was he to enter upon the study of medicine. In 1864 he received his medical degree from the school in which his father was a professor, and at once entered the medical corps of the army. He was assigned to hospital duty in Louisville, and served also in Lebanon, Kentucky. At the close of the war he entered upon general practice in Louisville. He did a large family practice, but about ten years ago he gave that up and held himself to the specialty of genito-urinary surgery, in which he reached distinction. In 1868 he was made professor of physiology in the medical department of the University of Louisville, and held a chair in the faculty up to the time of his death. In 1893 he became the president of the American Association of Genito-urinary Surgeons. He was a member of the American Medical Association, of the Mississippi Valley Medical Association, of the Kentucky State Medical Society, of the Medico-chirurgical Society of Louisville, and of the Surgical Society of Louisville. Of the last-named society he was the president and one of the founders.

As a practitioner, Dr. Palmer was astute, judicious, painstaking, and successful; as a teacher, he was impressive and lucid; as a man, he endeared himself not only to those with whom he was thrown into close association, but to those with whom he casually found himself, to the community in which he lived, as was shown by his having lately been elected an alderman, and to those physicians of the United States who—and they were the great majority of those who had achieved any considerable degree of eminence—were so fortunate as to meet him. He was a charming man—handsome and of youthful appearance for his years, engaging in his manners, entertaining in his talk, at once philosophical and poetical in his thoughts. He was invariably the salient figure in public gatherings at which he happened to be present, and of any company got together by chance he was sure to range the greater part around him by the charm of his discourse.

How he was loved in Louisville may be inferred from the following passage in the Louisville *Courier-Journal's* account of his untimely death: "It was only a few minutes after the accident occurred before several wheelmen who were passing were called to the spot by Mr. Colston [the gentleman with whose bicycle Dr. Palmer's had come into collision]. They did all in their power to render assistance. The ambulance was telephoned for and each man took upon himself the duty of bringing a doctor. In the mean time Dr. Palmer had been laid out tenderly upon the grass, and was watched by wheelmen until the physicians arrived. The ambulance came on a run, and after Dr. Palmer had been placed in it the drive to the infirmary was begun. The horses were driven slowly and carefully, and the vehicle was guarded by an escort of a dozen or more wheelmen. When the injured man was taken into the infirmary the bicyclists gathered about in little groups and discussed the accident in low tones. They insisted upon going for the physicians instead of telephoning for them, and endeavored in every way to be of service. One of them went to Dr. Palmer's residence, on First Street, near Oak, and delivered the sad tidings to the family."

Proceedings of Societies.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

The Vice-President, Dr. Parker Syms, in the Chair.

Meeting of June 5, 1895.

(*Concluded from page 28.*)

Cystic Tumors of the Vaginal Vault.—Dr. Frederick Holme Wiggin read a paper on this subject and presented specimens. (See page 45.)

Dermoid Cyst of the Right Superciliary Region.—Dr. Wiggin exhibited a specimen of this kind. The patient, J. K., an adult man, had been admitted to the Penitentiary Hospital, Blackwell's Island, early in June, 1894. He had had a tumor situated over his right eyebrow; fluctuating, movable, not adherent to the skin, and about an inch in diameter. The patient had stated that he had noticed that the tumor had varied in size from time to time. On June 11th, under ether anæsthesia, an incision an inch and a half long had been made, parallel with the eyebrow, and the tumor had been removed. The enucleation of the sac had been somewhat difficult, owing to the fact that it had been adherent to the periosteum. After its removal a shallow depression of the same diameter as the tumor had been noticed in the bone. The wound had been closed without irrigation, using silk sutures. It had then been dusted over with acetanilide and a gauze dressing applied. On opening the cyst it had been found to contain hair, white flakes, which had felt greasy, and oil. On June 13th the dressing and sutures had been removed, and a collodion-and-acetanilide dressing applied. On June 23d the dressing had been again removed and union found to have occurred primarily, the cicatrix being barely visible.

Intestinal Anastomosis.—Dr. Wiggin said that at the last meeting of the society he had referred to a dog that had been operated upon with the Murphy button and the Maunsell method respectively. The dog had been killed six months later, and the intestine examined at the laboratory by Dr. Dunham. Dr. Jeffries had made sections of the cicatrices, and would demonstrate them under the microscope to those who were interested. Apparently one anastomosis was just as satisfactory as the other.

Dr. W. Evelyn Porter said that he had had a case in which there had been five separate cysts between the bladder and the vaginal wall. The appearance had been very much like that of a large cystocele, but on making a careful examination under ether anæsthesia it had been evident that there was a very considerable space between the urethra and the vaginal wall. Upon making a small incision through the vaginal surface, considerable yellowish, semi-transparent fluid had escaped. He had been unable to find any communication with the urethra. The large external cyst had been of about the size of the one just reported. In the course of the dissection he had found a small opening extending up farther into another much smaller cyst. Beyond this had been three smaller cysts communicating with one another in the same manner. He had dissected them out without attempting to slit up the wall of the cysts. The raw edges had then been approximated, and the wound had healed primarily. The absence of any history of inflammatory trouble in this region had led him to believe that there was no such communication with the urethra. The patient was a married woman who had had children.

Dr. Wiggin said that ordinarily these cysts were of about the size of a pea. Probably the case just reported by Dr. Porter was also one of that kind.

Dr. J. B. Gibbs said that cystic tumors of the labia nearly always appeared in married women or in prostitutes, and were slow in growth; they contained blood, clear fluid, or pus, and were lined with mucous membrane or the ordinary lining membrane of an abscess. From these facts he was inclined to think that they were for the most part the result of infection. The treatment was, of course, the same as for abscesses in other regions—incision or excision.

Dr. Wiggin said that the remarks of the last speaker did not apply to his case, because tumors had not been in the labia, but between the anterior vaginal vault and the bladder.

Dr. Chandler remarked that in August, 1879, he had seen Dr. Pierson, of Orange, employ the method of dissecting out sinuses entire, and closing the wound by suture, and had supposed it to be original with him.

Dr. Gibbs said that the method dated back to the time when antiseptic surgery in New York had become very generally accepted—say 1881. The method often succeeded, but there was no way of being sure of getting a perfect result, and after all it only saved the patient some time.

Dr. Gouley said that the origin of a cyst lined with epithelium must be either glandular, as in a retention cyst, or congenital. If the cyst described by Dr. Wiggin had been lined with endothelium it would be clearly one from a lymphatic space or vessel. He thought that the majority of the cysts in this region were due to the occlusion of the mouths of the glands. He recalled a case in which he had found a tumor at the ostium vaginæ. It had been about an inch and a quarter in diameter, situated in the region of the vulvo-vaginal gland, and had probably been the result of closure of the duct of that gland. He had removed this cyst, as he had felt that this was the only method of securing a permanent cure. The wound had healed kindly.

PHILADELPHIA ACADEMY OF SURGERY.

Meeting of May 6, 1895.

The President, Dr. Thomas G. Morton, in the Chair.

(Concluded from page 24.)

Dr. John R. Deaver remarked that his experience differed from that of Dr. Horwitz in regard to keeping the urethra patulous. His custom was to introduce a soft catheter into the bladder through the perineal wound, where it was allowed to remain for four or five days. He also introduced a soft catheter through the anterior urethra, bringing it out of the perineal wound, where it was left for four or five days. He had had very little trouble in keeping the canal open thereafter by passing sounds systematically. One difficulty might arise from the fact that we left the operation of catheterism to an interne or assistant whose experience was necessarily limited. In order to accomplish the withdrawal of the sound for the first time it might be necessary to introduce the finger into the perineal wound or the rectum. The retention of an instrument might excite the irritation of the bladder and cause phosphatic deposits to take place upon it if not frequently cleaned.

With regard to the cases attended by infiltration, he had been fortunate in finding the urethra. In these traumatic cases, the deep incision was to be carried through the point in the perineum where the infiltration was thickest. By following this rule he had succeeded in finding the urethra. He had had occasion, however, to perform Cay's operation.

Dr. T. R. Neilson stated that his experience had been almost identical with that of Dr. Deaver, and he fully agreed with all that he had said. In all the external urethrotomies that he had done he had invariably effected drainage of the bladder by means of a flexible catheter inserted through the perineal wound. He had never left the catheter in the bladder for more than four or five days. At the end of that time he removed it, and began to pass sounds through the entire urethra. He did this himself, as there was occasionally some difficulty at first in getting the instrument to enter the posterior part of the canal, and he had sometimes been obliged to guide it with a finger inserted into the wound.

He had never yet had occasion to resort to retrograde catheterism, although he had met with cases of dense, impassable stricture, and of rupture of the urethra, in which it had been with great difficulty that the lumen of the urethra at the seat of the stricture, or the posterior end of the canal in cases of rupture, had been found. In one instance, in which there had been retention of urine due to a tight stricture, he had found, after opening the urethra in front of the stricture, that he could not discover the lumen of the canal in the great mass of indurated tissue with which the whole region was infiltrated. He had then resorted to Cock's operation, thrusting his knife so as to strike the urethra at the apex of the prostate. But, although he had felt confident that he had succeeded in doing so, no urine had escaped. For a moment he had thought that he would be obliged to open the bladder by the suprapubic route and to trace the urethra from behind, but before deciding to do so he had placed his hand on the hypogastric region, and had made firm pressure, with the result of causing the urine to gush freely from the opening. He had then passed a grooved director with its end bent forward into the stream of escaping urine, and hooked it into the urethra, divided the stricture upon it, and had established the continuity of the canal.

He thought that undoubtedly there might be cases in which the most careful search might fail to discover the urethra, and in which retrograde catheterism might be necessary, but it should not be resorted to hastily.

Dr. W. Joseph Hearn related the case of a man who had had stricture of the urethra, and, while attempting to pass his urine, he had felt something give way. There had been great extravasation, and his attending physician thought that there had been an abscess forming. The speaker had found the bladder full of urine and two or three spots of gangrene on the buttock. He had made an opening in the perinæum at the site of the abscess. He had opened the urethra and had put a soft catheter in for four or five days, and had then put in a silver catheter and had left it in for four weeks, and there had been no difficulty at all. The man had returned home, and he had no difficulty in passing No. 28 and in keeping the urethra open. In the second case, where retrocatheterization had been performed, there had been no difficulty experienced in passing the instrument.

The President stated that he had never had an occasion to open the bladder to do a retrocatheterism, and never had had any special difficulty in finding the urethra after complete division of the perinæum. With regard to leaving a catheter in the bladder, his experience had been that patients soon resented the presence of an instrument. He generally removed the silver instrument at the end of four or five days, or perhaps longer, and then introduced a soft-rubber catheter, and after a time reintroduced the silver catheter. It was better not to vary the curve of the silver instrument; we learned the route better with the original instrument, and it was wonderful how well such cases progressed.

Dr. Horwitz remarked that he had long since observed that trouble followed the removal of the catheter at the end of the fourth day, in cases of perineal section for tight strictures or rupture of the membranous urethra. Not only did the patient resist the reintroduction of the instrument every few days, but the method advised by Dr. Deaver of assisting the introduction of the catheter by inserting the finger into the perineal wound was very painful; it had a tendency to prevent the wound from healing promptly, and likewise favored the formation of perineal fistula, which so frequently followed these operations.

Referring to Dr. Morton's objection that patients were apt to complain, and usually desired to have the instrument removed, Dr. Horwitz said that this had not been his experience. He had generally found that when patients complained of pain caused by the prolonged presence of the instrument, it was owing to the catheter having been inserted too far, and because the handle of the instrument had been depressed between the thighs, causing pressure to be brought to bear on the perineal wound. If, however, the catheter was passed until the instrument merely entered the bladder, and the shaft was kept vertical instead of horizontal, no difficulty would be experienced, and the patient would be entirely free from annoyance.

Great care must be observed to keep the catheter clean. Irrigation with a boric-acid solution must be repeated at least once daily, that phosphatic incrustation might not take place; the fear that this might occur appeared to be Dr. Harte's objection, but by pursuing the method here indicated he had never seen any sign of incrustation.

In the last seventeen cases of perineal section that he had had, where the catheter had been allowed to remain until the wound was healed, he had had in every one union with a full-caliber urethra. In no instance did a perineal fistula form, the patient, as well as the bedding, being kept dry and clean until the wound was healed.

Retrograde catheterism was indeed rarely called for, but in cases where the prolongation of an operation meant the patient's life we were surely justified in opening the bladder to enable us to find the distal end of the urethra, an operation requiring but a few minutes.

In the case referred to by Dr. Neilson, where forty-five minutes had been consumed in searching for the posterior end of the urethra, he could only say that if the same length of time had been expended in the case reported the patient would either have perished on the table or a very few minutes later, for not only was he in a most precarious condition, but a larger amount of preliminary operating had to be performed, besides establishing the urethra. Much blood was necessarily lost and the shock was great, and if a long time had been lost looking for the distal end of the urethra the patient's life would probably have been forfeited. The successful recovery of this patient was in a great measure due to prompt action and to the time saved by retrograde catheterism. The operation was unhesitatingly recommended in similar cases.

Book Notices.

Medical Gynæcology. A Treatise on the Diseases of Women from the Standpoint of the Physician. By Alexander J. C. Skene, M. D., Professor of Gynæcology in the Long Island College Hospital, Brooklyn, N. Y. With Illustrations. New York: D. Appleton & Co., 1895. Pp. vi–529.

In these days of intense devotion to the surgical aspects of gynæcology none but a bold man would attempt to offer a book to the profession from a purely medical standpoint, and none who did not possess the highest qualifications would stand any chance of success in so doing. Dr. Skene, having long since won his spurs as a surgical gynæcologist, undertakes his difficult task with confidence. At first thought we are inclined to credit him with great keenness of vision in attempting to divide a subject which is already so vast that to treat of it comprehensively in a single volume requires unusual skill, but, having read the book, we feel, as the author must have felt, that many of the subjects will not fairly admit of such a division. To leave surgery out of gynæcology is to leave Hamlet out of the play.

The first thing that strikes the reader of this book is its beautiful typography; it is not often that the publisher's art is more clearly and attractively exemplified. The remarks in the opening chapter on diet and hygiene in general could be read with profit by every individual who has to do with the rearing of children, but we think the distinguished author underestimates the obligations which rest upon fathers in this particular. The error, if error it is, is a most common one. In our opinion, no one has a right to launch children into the world without due regard for the obligations which are assumed. The father's obligations do not end when he has provided food and shelter for his children.

We are also compelled to dissent from the statement, on page 18, that "up to the time preceding the first menstruation a girl should be left in ignorance of her sexual organs and all that pertains to them."

We are persuaded, indeed we know, that much mischief may come from such ignorance. We believe the mother or the teacher should take the child into her confidence as soon as its intelligence will permit, and teach at least the dangers which are to be avoided in relation to the sexual appetite and apparatus.

The author says, furthermore: "To teach anatomy and physiology to young girls is baneful." That depends upon what is taught, and by whom, and in what manner. The habit of introspection, if morbid, is indeed harmful and to be deprecated, but in so far as it leads to the proper performance of function it will be salutary. We hope the day is not far distant when enough physiology and anatomy will be taught to all boys and girls to impress upon them the importance of the care of their bodies, and especially of the sexual apparatus and its functions. The recommendations of the author of more physical exercise, *out of doors*, for women and girls are in line with this thought, and we see in the bicycle one great means of advantage and hopefulness for the future in this respect.

As to "woman's functions in life," the suggestions are wise and temperate. Let woman take any position in life which she is capable of filling. Only an intense partisan of woman's rights could desire more than the author concedes.

The consideration of the subject of electricity and electrotherapeutics, taken, as the author states, from Hare's *System of Therapeutics*, might well have been amplified from the author's work in this field. The omission may be due, as is stated in a subsequent chapter upon another subject, to the fact that this would involve the consideration of a surgical rather more than a medical view of the situation.

In the discussion of the acute and chronic inflammations of the pelvic organs, that central subject in gynæcological pathology, the author's views are eminently rational and sensible, proceeding from a simple anatomical standpoint without theorizing or sophistry. The difficulty of eliminating the surgical considerations is apparent here, as also in the succeeding chapter on displacements of the uterus. The chapters on diseases of the external genitals illustrate what seem to us the importance of early information in regard to these structures, as well as the difficulties attending purely medical treatment. We agree entirely with the author in his remarks in regard to vaginal examinations and the treatment of hysterical girls. We can not forbear to quote the essence of them: "Tampering with pelvic organs when there is nothing the matter with them increases hysteria tenfold, as we might rationally suppose." The chapters on hysteria, neurasthenia, and sex and its relations to insanity are the most satisfactory in the book, as they are almost purely medical. There is, however, a surgical aspect to the last-mentioned subject, and the conclusion seems a logical one that if the pelvic organs of the insane are diseased, either as a cause or as a concomitant of the mental disorder, they should receive appropriate surgical treatment, perhaps as a means of relieving the mental trouble.

An interesting statement which we do not remember to have seen elsewhere is that malignant disease of the uterus is more frequent among the insane than among the sane, perversion of nutrition in the pelvic organs evidently depending in such cases upon disordered nerve centres. The treatment of disease of the mammary gland, fibromata, and cancer by medical means is not advocated as a comprehensive method, though it frequently may serve as a useful adjunct. The treatment of disease of the urinary organs, to which Dr. Skene has devoted so much attention and with such gratifying results, when discussed only from the medical standpoint awakens the feeling that he is holding in reserve the most efficient portion of his armamentarium for an emergency. It is probable that Dr. Skene intended his book to serve as a barrier against the exclusive surgical tendencies of the gynæcological teaching of the day. Supported by the influence of his honored name, it will undoubtedly serve that purpose. But it should be read side by side with his other work, *A Text-book on the Diseases of Women.*

Atlas of the Diseases of the Skin, in a Series of Illustrations from Original Drawings, with Descriptive Letterpress. By H. Radcliffe Crocker, M. D., F. R. C. B., Physician to the Department for Diseases of the Skin, University College Hospital, etc., London. Fasciculus X. Edinburgh and London: Young J. Pentland. New York: Macmillan & Co., 1895. [Price, $6 each part.]

This part of the *Atlas* contains a plate representing some of the varieties of vaccination eruptions, which the author divides into avoidable and unavoidable; the first class may be prevented by careful attention to the details of aseptic surgery and the selection of suitable virus; the second class includes those eruptions that occur when pure vaccine has been inoculated with all the proper precautions. By an error the number under the figures in this plate have been transposed—Fig. 3 of the plate, an example of impetigo contagiosa after vaccination, is referred to as Fig. 1 in the text; Fig. 1, an illustration of erythema papulatum after vaccination, should be Fig. 3. There is an illustration of an interesting case of vesiculo-pustular eruption, probably due to microbic infection, following animal vaccination.

Plate XLI portrays a case of dermatitis gangrænosa infantum in a child a year old, in whom the eruption began as vesiculo-papular miliaria. This plate also contains an illustration of a case of erythema multiforme consequent upon vaccination in a child who seemed to be particularly susceptible to exanthemata, as she had measles, followed in a month by scarlet fever; about two months later she had chicken-pox, and five weeks after the latter, and the tenth day after vaccination, the erythema appeared.

Plate LI illustrates the general enlargement of the limb and the hypertrophic growth of the papillæ of the skin in a woman, aged fifty-five, who had elephantiasis, apparently consequent upon an intractable eczema of the leg. There is also a typical example of ichthyosis affecting the leg of a twenty-year-old laborer.

Plate LXXXI contains examples of two forms of seborrhoic dermatitis, one resembling psoriasis and the other lichen. The latter was formerly designated lichen simplex, but, on account of the frequency with which it is associated with seborrhœa capitis, the author regards it as a form of seborrhœa papulosa.

Plate LXXXIX represents the band and the patch forms of alopecia areata.

Plate XCV shows a front view of the torso of a woman, aged thirty-two, who was affected with diffuse and circumscribed tinea versicolor, which was cured with daily warm baths followed by rubbings with an eight-per-cent. solution of sodium hyposulphite.

The illustrations and letterpress maintain the high character of the preceding parts, which have been referred to in these columns.

The Diseases of Personality. By Th. Ribot, Professor of Comparative and Experimental Psychology in the Collège de France. Chicago: The Open Court Publishing Company, 1894. Pp. 157.

The author holds that individuality at its highest stage in man is the "accumulation and condensation in the cortical layer of the brain of elementary consciousnesses," which are, at their origin, autonomous and dispersed, and he endeavors to show in this work that the ascending progress toward higher individuality is epitomized in an increasing complexity and co-ordination. This co-ordination of a certain number of incessantly renascent states, which have for their sole support the vague sense of the body, constitutes the unity of the ego. This unity, he says, does not pass from above downward, but from below upward; it is not an initial but a terminal point. The unity of the ego is defined in a psychological sense as the cohesion, during a given period, of a certain number of distinct states of consciousness which are accompanied by others less distinct, as well as by a multitude of physiological states which, though not accompanied by consciousness like the others, yet operate as powerfully as they, if not more so.

In a last analysis, the consensus of consciousness being subordinate to the consensus of the organism, the problem of the unity of the ego is biological, because to biology belongs the task of explaining the genesis of organisms and the solidarity of their component parts.

The organic and affective disorders of personality, disorders of the intellect, and the dissolution of personality are reviewed, and the author considers that the diseases of personality may be classified under three principal types, alienation, alternation, and substitution.

The book is an interesting contribution to psychological literature.

Demon Possession and Allied Themes. Being an Inductive Study of Phenomena of our own Times. By the Rev. JOHN L. NEVIUS, D. D., for Forty Years a Missionary to the Chinese. With an Introduction by the Rev. F. F. ELLINWOOD, D. D., Secretary of the Board of Foreign Missions of the Presbyterian Church, etc. With an Index, Bibliographical, Biblical, Pathological, and General. New York: Fleming H. Revell Company, 1895. Pp. x–482. [Price, $1.50.]

THE author of the introduction refers to a belief, prevalent in North China, that the minds and bodies of men were possessed by evil spirits; and says that since the introduction of Christianity these Chinese believe that an appeal to Christ will expel the spirits and set the victims free. The incidents of the latter character mentioned in the book are given "on the testimony not of missionaries, but of native Christians." The reader is assured that there is no idea of intentional fraud on the part of the afflicted or of the Christian witnesses.

The investigations of the author of the work have led him to concur with the Chinese, who, by the by, are not alone in this idea, an invalid woman having recently been fatally burned in Ireland for the purpose of driving away a witch that had possession of the body, while the literature of psychiatry contains many reports of cases of dæmonomania.

The author has made a comprehensive review of the literature of his theme and of the data he has personally collected, and he has been forced to conclude that he could not refer the causation of the phenomena to any other source than that of demon possession.

While there are too many elisions in the logic, and too often a conclusion is accepted on insufficient evidence, the book is an interesting addition to psychological literature.

BOOKS, ETC., RECEIVED.

A Treatise on the Nervous Diseases of Children for Physicians and Students. By B. Sachs, M. D., Professor of Mental and Nervous Diseases in the New York Polyclinic, etc. New York: William Wood & Co. Pp. xviii–666. [Price, $5.]

Atlas of the Diseases of the Skin, in a Series of Illustrations from Original Drawings, with Descriptive Letterpress. By H. Radcliffe Crocker, M. D., F. R. C. B., Physician to the Department for Diseases of the Skin, University College Hospital, etc., London. Fasciculus X. Edinburgh and London: Young J. Pentland. New York: Macmillan & Co., 1895. [Price, $6 each part.]

Remote Consequences of Injuries of Nerves and their Treatment. An Examination of the Present Condition of Wounds received 1863–'65, with Additional Illustrative Cases. By John K. Mitchell, M. D., Physician to St. Agnes's Hospital, etc. Philadelphia: Lea Brothers & Co., 1895. Pp. 13 to 245. [Price, $1.75.]

A German-English Medical Thesaurus, or Treasure of Single and Compound Medical Words and Terms, with Dialogues, Idiomatic Phrases, and Proverbs, etc., and German and English Indexes for Physicians and Medical Students. By Rev. Henry Losch, M. D. Philadelphia: Published by the Author, 1895. Pp. 3 to 323. [Price, $2.50.]

Burdett's Hospital and Charities Annual, 1895. Containing a Review of the Position and Requirements, and Chapters on the Cost of Management, of the Voluntary Charities, and an Exhaustive Record of Hospital Work for the Year. It will also be found to be the most Useful and Reliable Guide to British, American, and Colonial Hospitals and Asylums, Medical Schools and Colleges, Religious and Benevolent Institutions, Dispensaries, Nursing and Convalescent Institutions. By Henry C. Burdett. London: The Scientific Press (limited). New York: C. Scribner & Sons, 1895. Pp. 2 to 915. [Price, 5*s*.]

Diagnostic et traitement des tumeurs de l'abdomen et du bassin. Par J. Péan, membre de l'Académie de médecine, etc. Tome troisième. Avec 228 figures intercalées dans le texte. Paris: G. Masson, 1895. Pp. viii–1093. [Prix, 15 *fr.*]

Die Protozoen als Krankheitserreger. Von Dr. L. Pfeiffer, Geh. Med.-Rath und Vorstand des Grossh. Sachs. Impfinstituts in Weimar. Mit 52 original Abbildungen. Jena: Gustav Fischer, 1895. Pp. v–122.

Transactions of the Medical Association of Central New York. Twenty-seventh Annual Meeting, October 16, 1894.

Report as to the Sanitary Condition of the Tenements of Trinity Church, and Other Documents. 1895.

Circular on the Care and Disposition of Persons found Unconscious on the Streets or Elsewhere. Prepared by a Special Committee of the Medical Society of the County of Kings, N. Y. [Reprinted from the *Brooklyn Medical Journal.*]

The Entrance of Woman into Medicine. By J. C. Reeve, M. D., Dayton, Ohio. [Reprinted from the *Western Reserve Medical Journal.*]

A Case of Double Pyosalpinx. By Hunter Robb, M. D. [Reprinted from the *Western Reserve Medical Journal.*]

A Successful Case of Porro-Cæsarean Section (modified). By Hunter Robb, M. D. [Reprinted from the *Western Reserve Medical Journal.*]

Miscellany.

The American Orthopædic Association.—The ninth annual meeting will be held in Chicago, on September 17th, 18th, and 19th, under the presidency of Dr. John Ridlon, of Chicago. The preliminary programme includes the following papers: On Forcible Correction and Corrective Jackets in the Treatment of Scoliosis, by Dr. Barnard Bartow, of Buffalo; Idiopathic Osteo-arthrosis, by Dr. Wallace Blanchard, of Chicago; The Use of the Plaster Jacket in Caries and the Effect of Position on the Spine—Caries in Adults, by Dr. E. G. Brackett, of Boston; Operative Measures in Caries of the Spine—The Treatment of Slipping Patella, by Dr. E. H. Bradford, of Boston; On the Surgical Treatment of Congenital Dislocations, by Mr. Bernard Brodhurst, of London, England; Some Cases of Osteoclasis with the Lorenz Osteoclast, by Dr. F. S. Coolidge, of Chicago; An Improved Osteoclast, by Dr. Nicholas Grattan, of Cork, Ireland; A New (Anterior) Spine Brace, with exhibition of patients, by Dr. A. E. Hoadley, of Chicago; The Deformity of Hip Disease, by Dr. A. B. Judson, of New York; The Causative Relation of Suppuration to Tubercular Meningitis in Joint and Spine Disease, by Dr. Samuel Ketch, of New York; The Ambulatory Treatment of Pott's Disease, by Dr. R. W. Lovett, of Boston; Clubfoot, by Dr. R. W. Lovett and Dr. John Dane, of Boston; Congenital Absence of the Radii, with Operation—Exhibition of a Hip-joint Brace—Plaster of Paris in Orthopædic Surgery—Specimens of Tubercular Bone Disease, by Dr. S. L. McCurdy, of Pittsburgh; The Rawhide Corset Spinal Brace—A Review of the Treatment of Hip Disease, by Dr. B. E. McKenzie, of Toronto; Spasmodic Wryneck, by Dr. T. H. Myers, of New York; The Deformities Produced by Acute Inflammatory Lesions in Bone, by Dr. Roswell Park, of Buffalo; Report of a Case of Congenital Dislocation of the Shoulder and an Operation for its Relief—The Treatment of Fracture from an Orthopædic Standpoint—How the Orthopædic Surgeon should Treat Abscesses (Tubercular and Purulent), by Dr. A. M. Phelps, of New York; The President's Address, by Dr. John Ridlon, of Chicago; One Thousand Cases of Lateral Curvature of the Spine Treated by Posture and Exercise, by Dr. Bernard Roth, of London, England; The Anterior Spine Brace, by Dr. J. C. Schapps, of Brooklyn; Some Considerations of the Mechanical Arrangements around the Hip Joint, by Dr. H. M. Sherman, of San Francisco; A Case of Double Congenital Knee Luxation, by Dr. H. L. Taylor, of New York; Pain in the Back—Metatarsalgia—The Use of Mechanical Support in the Treatment of Scoliosis, by Dr. L. A. Weigel, of Rochester; Observations on Weak Foot, with Particular Reference to its Predisposing Cause, its Diagnosis, and its Cure, by Dr. Royal Whitman, of New York; A Report of Seventy Cases of Splicing of the Tendo Achillis, by Dr. H. A. Wilson, of Philadelphia; The Treatment of Scoliosis by Light Gymnastic Exercises, by Dr. J. K. Young, of Philadelphia.

The Protective Effects of the Diphtheria Antitoxine.—Considerable evidence has recently been adduced regarding the protective effects of the antitoxine of diphtheria. Dr. F. Gordon Morrill, in the *Archives of Pœdiatrics* for July, reports the results of four hundred and thirty-eight protective injections made at the Children's Hospital of Boston. During the year 1894 this hospital was closed three times on account of the prevalence of diphtheria. On January 13, 1895, there were nine cases of diphtheria in the infectious ward, five of which had appeared within forty-eight hours. The question of closing the hospital for the fourth time was discussed, but it was decided first to try the protective effect of the antitoxine. Injections were at once made, and the apparent result of this first attempt was to arrest instantly any further spread of the disease. Although the children were frequently examined for bacilli, none were found until January 29th, when they were discovered in one case. Upon this all the children were again subjected to the injections. No bacilli were again found until February 15th. Injections were at once given in all cases in which they had not been employed within two weeks, and a rule was established to repeat them every fortnight. With regard to the protection afforded by the antitoxine, experience tended to show that the serum could be relied upon to protect against anything that resembled diphtheria clinically for at least thirteen days, and probably for a longer period. The writer is convinced that full doses of serum have no influence on the mere presence of bacilli after they have once obtained a foothold. He believes that our estimate of the results of the serum treatment must be based upon such cases as are clinically diphtheria, the diagnosis of which is confirmed by bacteriological examination. As to the value of the antitoxine as a protective agent he seems to have no doubt.

Dr. L. Emmett Holt, in the same journal, reports the result of the use of the antitoxine for protection in the Nursery and Child's Hospital and in the New York Infant Asylum. In the first-named hospital, between January 18th and April 18th, forty-six cases of diphtheria occurred, the diagnosis being confirmed in each case by cultures. They were not confined to a single ward, but were scattered throughout the institution. During the last two weeks of this period the number of new cases was steadily increasing. On April 18th a hundred and ten children were injected with serum obtained from the board of health, and eight days later twenty-six were injected This included all the children except those who had recently had diphtheria and twenty infants under two weeks of age. From that day to June 21st, the date of the report, not a single case of diphtheria occurred among the children injected.

In the New York Infant Asylum, in three months, thirty-two, thirty, and thirty-one cases of diphtheria appeared. During the first fourteen days of January twelve cases developed. Two hundred and four children were then injected with Behring's antitoxine No. 2, the dose being from one hundred to two hundred units. No case of diphtheria appeared for eighteen days, when one developed. As several cases appeared about the fortieth day, two hundred and fifteen children were injected with serum obtained from the board of health. No case appeared thereafter for thirty-one days. From the thirty-first to the sixty-fifth day three cases appeared. After that no cases occurred.

The shortest time after injection at which diphtheria developed was on the thirteenth and on the eighteenth day. With these two exceptions no cases appeared under thirty days, although the children were constantly exposed to infection. The writer expresses himself as convinced that injections of antitoxine for protective purposes are of inestimable value.

The Percentage Designation of Medicated Gauzes.—The *Pharmaceutical Era* has investigated the question as to precisely what is meant when, for example, a ten-per-cent. iodoform gauze is ordered, a matter about which, it has discovered, there is much confusion. It concludes its exposition as follows:

"Just what formula is most desirable for an antiseptic application, whether a dry or a moist gauze is preferable, is entirely a matter for the surgeon to decide. If he prefer a dry iodoform gauze, containing ten per cent. by weight of iodoform to one hundred parts by weight of the dry, finished gauze, or if he prefer a gauze dipped in a ten-per-cent. solution (any chosen formula) and wrung out, but left in a moist condition, this is entirely his affair. He should know, however; but proofs at hand have amply satisfied us that he does not know, in all instances, the exact strength of the medicament applied to the wound. An examination of the formulas of the hospitals and of those in private use by various surgeons shows in nearly every instance an element of error, whereby any variation in the weight of the gauze, its fineness, etc, may lead to a very decided variation in percentage composition, if the percentage is based upon the weight of the finished product Does the physician wish to apply a dry gauze to the wound? If so, he applies the inert substance gauze, bearing pure iodoform. Or does he prefer a moist gauze, medicated by a ten-per-cent. solution? In this case he is not applying pure iodoform, but a ten-per-cent. solution. This is a matter for him to decide, which he prefers.

"Let us examine into one or two aspects of the question which appear of importance. The National Formulary, a few other formulas which we have been able to find, and one or two manufacturers base their operations upon percentage of parts by weight in the finished product. A great majority of formulas, however, and more than half of the manufacturers, make a gauze impregnated with a solution of definite percentage strength. Upon comparing the various products some interesting points are brought out. The following are actual weights of the gauzes employed by the firms and institutions mentioned, in grains per square yard:

Lehigh, E. (National Formulary)	785
Johnson & Johnson	585
Bellevue Hospital	570
J. Ellwood Lee Co	539
Seabury & Johnson	436
Hospital Supply Co	256

"From the above it will be seen how greatly the unmedicated gauze varies in weight per square yard. Now, suppose we use the National Formulary process with these gauzes. To make one square yard of plain gauze ten-per-cent. strength, the amounts of iodoform required, in grains per square yard, will be as follows:

Lehigh, E. (National Formulary)	92
Johnson & Johnson	69
Bellevue Hospital	67
J. Ellwood Lee Co	63
Seabury & Johnson	51
Hospital Supply Co	30

"In other words, one gauze will require in grains more than three times as much as the lightest on the list to make a gauze by the National Formulary process.

"Going a step still further, in order to point out what we consider the fallacy of the finished product standard, attention is called to the following tabular statement which, for the sake of comparison, shows the weights of one yard of iodoform gauze as finished for the market by the various processes:

Johnson & Johnson	1,389	grains.
Bellevue Hospital	1,270	"
J. Ellwood Lee Co	939	"
Lehigh, E. (National Formulary)	937	"
Seabury & Johnson	697	"
Hospital Supply Co	384	"

"Now, if all these gauzes were required or understood to be of a standard of ten per cent. by weight of the finished product, the heaviest one would contain five times as much iodoform to the yard as the lightest, or, if the lightest gauze showed ten per cent. of iodoform by assay, the heaviest gauze would only require from three to four per cent. to possess an equal amount of iodoform to the square yard. In view, therefore, of the confusion and discrepancies and the discussion between surgeons and manufacturers, it appears very evident that the establishment of a definite standard and adherence thereto by the manufacturers is necessary. It is not fair to apply the percentage by weight standard to a moist dressing, for it is easily seen that it may assay less than this standard, and yet really contain two or three or more times as much medicament to the square yard as another dressing, dry, which assays the percentage claimed.

"The manufacturers are interested in this matter to the extent merely of providing surgeons with the kind of dressing they desire, and having provided such, they should see to it that there be no ambiguity in the labels on their packages. It is for the physicians to say what kind of dressing they wish, and to what the percentage term should be applied. It is important that a standard be adopted, but it is immaterial to the manufacturer, or should be, which one is decided upon. The label on the antiseptic dressing should express its strength, either in grains of the medicament to the square yard, or in percentage of the finished product, or the percentage strength of the solution employed in the medication of the dressing. On this point there should be no agitation whatsoever, and we note that Johnson & Johnson now include upon their labels a statement to the effect that 'this gauze is a saturation of sterilized absorbent gauze with a stable emulsion containing ten per cent. of iodoform. The impregnation is uniformly and accurately adjusted upon a basis of ten parts of iodoform to ninety parts of *dry* gauze. Approximately, each square foot contains eight grains of iodoform.' Seabury & Johnson state on their labels the percentage by weight of the dry product. If all the manufacturers would follow this course of making the label tell exactly what is contained in the package, there would be no necessity for further agitation of this percentage matter. Their differences then would be merely those of opinion relative to the proper processes and the proper products, in which they would be guided necessarily by the demands of their patrons.

"We would touch briefly, however, upon a matter of considerable importance, and that is the methods of testing antiseptic dressings to arrive at their content of medicament and their essential value. One manufacturer directs his customers to take a certain weight of his iodoform gauze, extract it with ether, evaporate the solvent, and weigh the residue, which should then show ten per cent. by weight of medicament upon the dry gauze. This test is sufficiently accurate for the valuation of this particular manufacturer's product, but it is of no value for moist gauzes and others of different formulas. The test is very fallacious. If the dressing has been made by a process like that of the National Formulary, or that of Lister and others, where a resinous substance is used to hold the iodoform in contact with the gauze, the ether dissolves the resinous matter and any other loading which may have been used, and these are calculated as iodoform, giving, of course, too high a result. On the other hand, if the gauze is medicated with an emulsion of soap, such as is used in many hospitals, or of starch glycerole, as by one manufacturer, in order to entirely remove the iodoform from the gauze, many washings with ether would be necessary, a final separation of the chemicals, and an estimate of the iodoform separately.

"While criticising this manufacturer for this fallacious test, which he would apply to all iodoform gauzes, we would, on the other hand, emphasize the necessity of some perfectly reliable test to determine the actual amount of iodoform in the various gauzes on the market, a test which the ordinary retail pharmacist can apply and be certain that he gets iodoform and nothing else.

"We believe we have shown in this brief presentation of the case the point in the controversy, and have indicated wherein the confusion has arisen, and how it may be dissipated. The manufacturers will continue to make their products by whatsoever methods they choose, in accordance with the desires of the medical fraternity, as they find them to exist, but whatever standard is thereby arrived at, the package of antiseptic gauze should be so plainly labeled that there shall arise no misunderstanding as to its exact strength."

The Decline of Hypnotism.—The *Lancet* says: "There seem many signs that we are witnessing the decay of hypnotism. The stream of hypnotic literature would appear to be gradually subsiding—not, perhaps, before it was time—and the interest in the subject, both public and professional, is evidently on the decline. The claim of hypnotism to take rank, not as a curious psychological phenomenon, but as a recognized branch of therapeutics, is now pressed with much less insistence and sincerity than was the case a few years ago; and it would seem that history is once more repeating itself, and that the periodic burst of attention and curiosity evoked by the subject has for the present, as on former occasions, spent its force. To readers of the *Lancet* such a course of events will be in no way surprising. While admitting that modern hypnotism presented some new developments and refinements, we have always maintained that in essence it was identical with the mesmerism, Braidism, animal magnetism, and electro-biology of former times, and that in due course it would be found to be barren, if not noxious, in the field of medicine. Students of psychology must always be interested in the curious phenomena of hypnotism, but we feel more than well justified in having resisted the intrusion of hypnotic doctrine and practice into the domain of medical science. The dangers of the proposed new departure were evident and grave, its advantages at best problematical, at worst illusory and deceptive. It may not be amiss to recall some of the salient features of a controversy which, we suspect, is nearing its predestined termination.

"A cardinal point, *ab initio*, was, Are hypnotic phenomena normal or abnormal, physiological or pathological? It has been alleged that the phenomena were perfectly normal and natural, and some of the apostles of the movement have even gone so far as to assert that more than ordinary strength and balance of mind were necessary to constitute any one a thoroughly good subject for hypnotism. It was said that the power of sustained concentration of attention was the most essential point in securing the success of the experiments, and that such a power was the very antithesis of hysteria or morbid neurosis. On the other hand, the more general and gradually prevailing opinion has been that the hypnotic trance and all the curious attendant phenomena were of the nature of disease and showed a mind not abnormally strong or even normally sane, but to a more or less extent temporarily off its balance. This latter view is, in our judgment, most in accord with recorded fact and most consistent with theory. The hypnotic subjects who abounded in Paris and Nancy did not seem to most dispassionate observers to be good examples of sane and vigorous intellect. On the contrary, the atmosphere of morbid introspection, display, and more or less charlatanism seemed to cleave to these practised performers and all their curious evolutions. Ordinary experience of life teaches us that one of the most potent forces in human nature is the love of notoriety and the desire to become the centre of interested attention. *Possunt quia posse videntur* is a principle of very wide application. Granted an atmosphere of excited interest and a strong expectancy of certain results on the part of subjects and operators, and the most astonishing effects can easily be produced. Again, if it is of the essence of hypnotism that the subject should yield his will to that of the operator, and more or less merge his personality in that of another individual, we think such a condition much more likely to be associated with mental weakness than with mental strength. We by no means assert that conscious imposture was usual in these experiments, although we believe it had often a considerable share in the results, and we quite admit that hypnosis is a genuine phenomenon—as genuine, for example, as somnambulism; but we believe it to be essentially morbid, and associated with feebleness of will and unusual impressionability. The most probable theory of its causation has always seemed to us the view that was put forward by Heidenhain and other good physiologists—viz., that the hypnotic trance is the result of an inhibition of some portions of the cerebral substance, the remaining portions acting abnormally and giving an extraordinary response to ordinary stimuli.

"The second great controversy had regard to the question, Granting that hypnosis is real and can be evoked according to definite rules, is it capable of being turned to useful account in the field of therapeutics? When we reflect upon the strong claims that were put forward for hypnotism as an anæsthetic, an analgesic, a nerve stimulant, and what not, it must seem not a little surprising that so potent an agent should be allowed to rust in the not overstocked armory of treatment. We suspect the marvelous results alleged to have been attained have not well withstood the crucial tests of time and wider experience. There was a stage in the annals of this curious history when even grave organic maladies—*e. g.*, hemiplegia, Bell's paralysis, etc.—were alleged to be submissive to hypnotism. We are not sure that even tumors were not alleged to have vanished on the waving of the magic hypnotic wand. But by degrees one claim only was insisted upon—namely, that hypnotism was a potent remedy for 'functional' nervous affections. Every experienced physician knows that these maladies constitute the most illusive of all fields for therapeutic experiment. The victim of functional nerve disorder not infrequently gets well with any treatment or no treatment. Above all is it clear that any strong impression on the nervous system, whether produced accidentally or by deliberate therapeutic endeavor, frequently results in the cure of such cases. That hypnotism is one way of producing such an impression we fully grant, and its beneficial effect might be freely admitted if there was no reason to suspect that the cure might be worse than the disease. To drive out neurasthenia by inducing the hypnotic state is a procedure fraught with so much peril, both on the moral and the physical side, that it can only be undertaken with grave apprehension. The broken-down nervous systems that form the bulk of neurasthenic cases are bad material for doubtful psychical experiments. Rather should we commend in such cases the old and well-tried methods of treatment by rest, change, fresh air, diet, tonics, modifications of unwholesome environment, suitable occupation, and recreation. These methods often succeed, and it can at least be said that their failure does not make the last case of the patient worse than the first.

"Hypnotism is undoubtedly worthy of study, but we suspect that more and more it will be handed over to the psychologist, perhaps sometimes to the alienist, and that its interest for the practical physician will steadily wane. Until the evidence of its utility is a hundredfold more conclusive than it at present appears we shall not regret having striven to preserve medical science from identification with doctrines and methods which are tainted with charlatanry."

The Production of Immunity against Snake Poison.—On June 3d Professor Thomas R. Fraser, of Edinburgh, communicated to the Royal Society of Edinburgh a paper entitled On the Rendering of Animals Immune against the Venom of the Cobra and other Serpents, and on the Antidotal Properties of the Blood Serum of the Immunized Animals. A full and most interesting abstract of the paper appears in the *British Medical Journal* for June 15th, and the *Journal* has an editorial on the subject in which it says:

"It may be interesting to compare his [Professor Fraser's] methods and results with those of Dr. Calmette, the well-known head of the bacteriological station at Saigon, Cochin China, who has been working much on the same lines. We therefore subjoin a summary of a paper by him on this subject, which was published in the *Annales de l'Institut Pasteur* for April, 1895. He used in his experiments the fresh venom of a variety of *Naja tripudians* (cobra di capello) peculiar to Cochin China; *Crotalus durissus*, of America (rattlesnake); *Bothrops lanceolatus* of Martinique (fer-de-lance); *Naja haje* (the asp of Cleopatra); *Cerastes*, of Egypt; and the dried venom of the *Pseudechis porphyriacus*, of Australia (blacksnake); *Hoplocephalus curtus* (tiger snake); *Hoplocephalus variegatus* (broad-headed snake), *Acanthophis antarctica* (death adder), and *Trimeresurus viridis* (trigonocephalus), of Cochin China.

"Calmette describes how, by repeated vaccination, he is able to render animals immune to poisonous doses of venom.

He shows that the poison of the various snakes as well as scorpions acts always in the same manner and differs merely in intensity. To render the serum of rabbits not merely preventive, but even curative, of the bite of a snake, it is necessary to inoculate these animals every two or three days (during at least four or five weeks), commencing with about the twentieth to a tenth part of a mortal dose, at the same time watching their weight, and, as soon as any sign of loss of weight appears, suspending the inoculation for a short time. By this method it is possible to immunize rabbits against a quantity of poison, even to a dose that is capable of killing eighty rabbits or five dogs. Five drops of such serum perfectly neutralizes the toxicity of one milligramme of venom *in vitro*. This immunized serum can be used therapeutically, for if one inoculates an animal with the venom, and in less than a few hours inoculates the antitoxic serum, as a rule the animal recovers.

"It appears that in a vaccinated animal the injection of the poison is accompanied by a marked hyperleucocytosis, while in those animals which are not vaccinated the same poison causes hypoleucocytosis.

"Calmette further shows that snake poison is rendered inoffensive by mixing it with a weak solution of hypochloride of lime or gold chloride. He proposes, therefore, in cases of snake bites immediately to wash the wound with a solution of hypochloride, to apply a ligature round the limb so as to hinder the circulation for a short time, and to inject in eight or ten places round the wound hypochloride in one-cubic-centimetre doses. One can also, after removing the ligature, by means of a little massage cause the diffusion of the inoculated fluid. If one has any antivenomous serum, twenty to thirty cubic centimetres should be inoculated into the subcutaneous tissues of the abdomen. He also investigated the immunity supposed to be possessed by the ichneumon, pig, etc. As regards serum, he could find no marked effect; while the serum of the ichneumon is slightly antitoxic *in vitro*, its preventive power is insufficient to be a certain factor. The animals themselves are able to withstand a very large dose of the poison, and their power of killing snakes is due partly to their remarkable agility and partly to their partial natural immunity. He investigated the action of the serum of various other animals, as the horse, calf, ox, rabbit, guinea-pig, pig, and dog, and found them all inactive except in two out of five cases of dogs, and he considers that these two dogs have probably suffered previously from some disease which rendered the serum antitoxic. He further shows that the normal serum of man is sometimes antitoxic against that of diphtheria, and that many of the serums of immunized animals are rendered immune against other toxines than those for which they have been immunized. Thus a rabbit vaccinated against snake venom is rendered resistant against poisoning by abrine, and those vaccinated against abrine may acquire a certain degree of immunity against snake poisoning, diphtheria, ricine, and even against anthrax. It is thus that animals vaccinated against erysipelas or rabies have a serum so active against snake poison that it may in certain cases become even preventive.

"All these experiments show that the serum of animals immunized against a certain poison or virus may be capable of causing an immunity against another poison or virus; they further show that the degree of resistance of an animal is not always correlative to the antitoxic power of its serum against a virus or poison for which it was immunized. He states that the question whether we are close upon the day when we may conclude that an antitoxic serum has no real specific action, and when we may hope to discover an ideal serum which will be active against all microbial poisons, although a most seductive hypothesis, does not seem admissible. We know of no serum which is capable of neutralizing with equal energy various toxines; for example, the antivenomous serum is much more active in snake poison than any other antitoxic serum, and we see that the same holds good with antitoxines of diphtheria, tetanus, etc."

The Radical Cure of Varicocele.—The July number of the *Annals of Surgery* contains a paper with this title, by Dr. Francis W. Murray, read before the New York Surgical Society. Dr. Murray says that his experience in the operative treatment of varicocele is limited to nineteen cases, the majority of which were in hospital practice. In two cases subcutaneous ligation was performed, once with sterilized gut and once with sterilized silk. The varicoceles were of moderate size, and in neither case was there elongation of the scrotum. Both patients did well, and were discharged in seven and eleven days respectively.

In the case where catgut was used there was recurrence in a few months; in the other, the result was satisfactory two years after the operation.

Subcutaneous ligation with catgut combined with ablation of the scrotum was performed in one case, and the patient was discharged from the hospital in eighteen days. Four months afterward recurrence took place and excision of the veins was declined.

In three cases ablation of the scrotum with the aid of Henry's clamp was resorted to. The varicoceles were rather large, and in one case the veins on both sides were affected. The wounds healed *per primam*, and the average duration of confinement was eighteen days. In two of these cases there was recurrence, the other patient was never seen after his discharge from hospital.

In eight cases open excision of the veins combined with ablation of the scrotum was practised. Five were of large size, the other three of moderate size, and in all the scrotum was elongated.

In six the wound healed promptly, and beyond some œdema of the scrotum and slight tenderness of the testicle nothing was noted. The average duration of confinement was eighteen days. In one case convalescence was delayed by a secondary hæmorrhage from a scrotal vein, requiring the reopening of the ablation wound, turning out some clots, and ligation of the bleeding vessel. In one case there was suppuration, with the formation of a small abscess at the site of one of the ligatures. This was a case of large varicocele, and the veins were tied off in several packets, thus requiring the use of several ligatures. Suppuration appeared on the eighth day after the operation, whereupon the excision wound was reopened and a small amount of pus containing a sloughing catgut ligature was evacuated. It may be of interest to note in this case, says Dr. Murray, that for three days preceding the evacuation of the abscess the patient suffered from paroxysmal hæmoglobinuria. Repeated urinary examinations revealed no lesion of the kidney, and a cystoscopic examination of the bladder was negative. With the evacuation of the pus the urine resumed its normal color, and remained so as long as the patient was in the hospital. Of these eight patients five were seen some months after operation and there was no recurrence; the other three were not heard from.

In five cases excision of the veins, according to Bennett's method, was carried out. Four were of moderate size, one was a very large one, and in all the scrotum was elongated. All the wounds healed by primary union and were thoroughly satisfactory, and the average duration of confinement to hospital was fourteen days. Four of the patients have been seen at periods varying from six months to two years after the operation, and the results are very satisfactory. In all the four cases the shortening of the cord had been maintained, the scrotum fitted closely about the testicle, and at the site of the ligatures slight induration remained.

As a result of his experience, Dr. Murray states that his preference is for the open method, which is best illustrated by Bennett's operation, as the one most likely to effect the radical cure of varicocele.

The Treatment of Infantile Diarrhœa with Tannigen.—In the *Journal de clinique et de thèrapeutique infantiles* for June 20th Dr. Richard Dreus, of Hamburg, publishes an article on this subject. In order to avoid, he says, the disadvantages in the employment of tannin, M. Meyer, of Hamburg, made some experiments with the ethereal combinations of this drug, a derivative of tannin, which remained insoluble in the stomach and were dissolved gradually in the intestines. This substance he named tannigen. It is a fine powder of a grayish-yellow color, without taste or smell. It is slightly hygroscopic and melts at from 368·3° to 375·4° F. In water it becomes of the consistence of honey at 122° F. In diluted acids, in cold water, in ether, and in boiling water it is very sparingly dissolved.

Experiments with tannigen on rabbits and cats have shown that the powder passes over the mucous membrane of the mouth and of the stomach without exercising any appreciable influence—that is, without disturbing the appetite—even in doses of several grains, and that it is decomposed in the intestines by the alkaline juice into potassium acetate and tannin, which limits the secretion and produces a thickening of the discharges.

Müller has employed tannigen in very small doses in chronic enteritis, dysentery, and tuberculous diarrhœa with very good results. In the majority of cases the number of stools was diminished and the discharges were rendered less liquid. Kunkler, of Bonn, has employed it in twenty-five cases of infantile diarrhœa with success. During the first few days he gave calomel and naphthaline at the same time, for the purpose of disinfecting the intestines. He recommends continuing the employment of tannigen for several days after the catarrhal symptoms have disappeared, in order to prevent a return of the disease.

The author himself has used tannigen for a year in cases of various kinds of diarrhœa with good results. As the drug has no taste or smell, children take it willingly, and in no case, even in nursing infants, has it produced any unfavorable influence on the appetite or upon the functions of the stomach. In many forms of diarrhœa he has employed it successfully without using any other antiseptic drug. The astringent properties of tannigen diminish the secretion of the intestinal mucous membrane and regulate the hepatic and pancreatic secretion. It acts as an antiseptic upon the putrid masses in the intestines and destroys the bacilli.

Dr. Dreus cites many examples to show the efficacy of the drug, and thinks that the conclusion may be drawn that it is an excellent remedy in various kinds of infantile diarrhœa, owing to the astringent property of the tannin and its antiseptic action.

The Insanity of Menstruation.—In the *Gazette de gynécologie* for June 1st there is an article on this subject in which the writer says that the influence of the genital functions on the mental is considerable, and that it is not astonishing that their establishment, especially in women, should play a very important róle in their action. The cerebral symptoms which depend on menstruation may be studied separately according to whether they are produced before, during, or after the period of uterine activity. The disturbances occur frequently during the period which precedes puberty; they are often observed also at the menopause.

The symptoms which are produced when menstruation occurs are very numerous and are, for the most part, of a congestive nature, affecting various organs, and often involving the entire nervous system. In this way may be explained the periodical and slight disturbances which are observed at this time. The author relates the case of a young girl who, although ordinarily in good health, entered the hospital for troubles of this kind. She menstruated regularly, but was subject at such times to attacks of asthma, also to very acute uterine colic. Six months after her entrance into the hospital she had a violent emotional attack, which was followed by the arrest of menstruation and mania accompanied by hallucination that lasted for ten days. She recovered completely, but at the next menstrual period the cerebral disturbances were reproduced and, from that time, returned at each menstruation.

These attacks of mania, says the author, are especially characterized by excessive loquaciousness, by agitation, by extraordinary fancies, etc. There are also aggressive symptoms, and the attack always lasts from eight to ten days. The patient, however, remembers nothing of what has passed. This, says the writer, is an important point, for an insane person who does not remember anything in regard to the cerebral symptoms is further from recovery than one who can recall what has passed.

In the case of the patient mentioned there was an absolute coincidence between the attacks of mania and menstruation, and the pain that she had experienced on former occasions had completely disappeared. The cause of these symptoms may be found especially in predisposition. The patient's father was subject to attacks of melancholia, and her mother to some neuropathy; a sister also suffered with hystero-epilepsy.

It is notable, moreover, says the author, that during menstruation the majority of women experience some unusual symptom, usually involving the nervous system. The commonest symptom observed is sick headache, which may be regarded as the beginning of a slight cerebral excitation. But apart from this there are peculiarities of character which become more and more marked and sometimes reach an excessive degree. Among hysterical persons, especially in epileptics, very often something occurs to provoke the attack. But in mental disturbances a change in disposition is more frequently observed, the patient becoming very quarrelsome and disputatious; the feeling of jealousy, also, is often so pronounced as to become a source of loss of health.

In cases of this kind it is a question of mental or moral disturbances which are but the precursors of graver symptoms. The most serious of these disturbances is homicidal mania; however, a generalized and not a specialized derangement is more frequently observed, and it breaks out nearly always before menstruation, all symptoms ceasing with its occurrence or shortly afterward, Nevertheless, many patients are the subjects of chronic mania, of which melancholia is the commonest form; it is a form also particularly observed in young girls at the time of the first appearance of menstruation, although it may entirely disappear afterward.

The prognosis of menstrual insanity, says the author, is comparatively favorable. The affection is quite often cured, but the patient's predisposition to disturbance of this kind must be taken into consideration. If this is borne in mind, treatment has a greater influence in these than in other forms. The employment of leeches and blisters may be of some use, but the principal medicine to employ is potassium bromide. It may be used in all the milder forms of the affection, but when it is a question of true mania it must not be forgotten that, in addition to opium, morphine, and atropine, tartar emetic in weak doses constitutes a very efficacious sedative, which is extensively used in England especially in cases of this kind.

A Case of Poisoning with Cocaine.—The *Revue internationale de médecine et de chirurgie pratiques* for June 10th contains an abstract of a report of a recent meeting of the Medical Society of Hamburg at which M. Schede related the case of a young man who was suffering with urethral stricture. A urethral injection of two cubic centimetres of a ten-per-cent. solution of cocaine was administered to him, and a few minutes afterward cyanosis of the face, dilatation of the pupils, and profound coma set in. At once artificial respiration was practised, also irrigation of the bladder and of the urethra. Five minutes later trismus and tetanic convulsions manifested themselves. During the attack the pulse was small and respiration was arrested. Injections of ether and of camphor, with inhalations of amyl nitrite, produced no effect. Artificial respiration was continued and oxygen given in inhalations. In twenty-five minutes after the appearance of the symptoms the respiration was of the Cheyne Stokes type and the cyanosis had increased. Phlebotomy was practised without success. After fresh attempts with artificial respiration and oxygen inhalations there was a slight reaction of the pupils. Intravenous injections of two ounces and a quarter of sodium chloride were then made and produced a favorable action. There were still from time to time convulsive cramps in the extremities, spasms of the right side, and clonic convulsions. The pulse was still 160 a minute. Two hours after the symptoms of poisoning appeared the patient urinated spontaneously; a quarter of an hour later consciousness began to return, and at the end of the third hour the man was entirely conscious. There remained only a slight paresis of the right side of the face, which disappeared on the following day. The ocular symptoms showed that there had been irritation of the sympathetic nerve. It was, however, experimentally shown that, according to the dose employed, cocaine would give rise to reverse symptoms. Small doses would increase the tension of the circulation and large doses lower it. There might also be vaso-dilatation or vaso-constriction. This case, said Schede, belonged to the graver forms of poisoning by cocaine in the second degree, which was shown by the fact that the amyl nitrite had no effect, for the dilatation of the blood-vessels increased. The cramps indicated irritation of the spinal marrow. Schede calls attention to the dangers of cocaine, which result principally from the idiosyncrasies of certain subjects. In mild cases of poisoning amyl nitrite has a favorable action; in the grave cases inhalations of oxygen, phlebotomy, and intravenous injections of a solution of sodium chloride must be resorted to. It has also been recommended to add nitroglycerin to the cocaine solution. In order to avoid, as much as possible, symptoms of poisoning, solutions of not more than two per cent., or still more diluted, should be used for hypodermic injections, which must not follow each other too closely. According to Kummer, the region to be injected must be rendered bloodless before the injection is administered.

An Organized Study of Leprosy.—Dr. N. B. Emerson, of Honolulu, formerly of New York, the corresponding secretary of the committee on the treatment of leprosy of the Board of Health of the Hawaiian Islands, has issued the following circular, dated May 7, 1895:

The Board of Health of the Hawaiian Islands, acting through its committee on the treatment of leprosy, has lately established a small hospital at Kalihi, in the outskirts of Honolulu, and has begun a work which has for its purpose the solution of the questions, *Is leprosy curable?* and *What are the best means for its relief and eradication from the human system?* Twelve patients, selected from the leper colony at Kalawao, on the Island of Molokai, have been placed under treatment at the Kalihi Hospital. While a rigid quarantine of the patients will be kept up, it is the purpose of the committee to make their surroundings as comfortable and healthful as possible. For this purpose they will be provided with an abundance of wholesome, nutritious food, clean bedding in airy rooms, and the opportunity for outdoor exercise and recreation. There will be an abundant supply of pure water and the use of hot and medicated baths will be an important feature of the treatment. The many several remedies which experience has pointed out as of use in combating this formidable disease will be tested in the treatment of the patients, and their efficiency carefully noted. While not blind to the fact that the chances are small of hitting upon any specific remedy or method which shall avail for the cure of leprosy, we do not despair of progress, and shall feel that the experiment has not entirely failed of its purpose if it only increases our knowledge of how to use with greater precision the agents which science and experience put into our hands. The great development of bacteriology of late years has opened up immense possibilities for the relief of disease. Its special application to the treatment of leprosy, though as yet an untraveled road, is one that seems on theoretical grounds to invite trial and to commend itself to our judgment. It will be the purpose of the committee to enlist the resources of this branch of medical science in the study and treatment of the disease at as early a date as possible. Careful notes have been taken and photographs made of the patients and will be kept up during the different stages of the treatment. This experiment is entered upon in the interest of medical science and humanity, and as such the committee is anxious to enlist in its aid the interest and intelligent co-operation of all members of the medical profession, and invites suggestions both as to means and methods from yourself as an interested student of leprosy. It would be a favor to the committee to communicate to it the name of any drug which experience or judgment approves as beneficial against leprosy. It is the purpose of the committee to publish, when the proper time comes, a bulletin or report of progress regarding its work. In the mean time it will be thankful to avail itself of your aid in enabling it to enlarge its acquaintance with the bibliography of leprosy and to put it in the way of becoming the owner of various monographs on the subject as they are published. It will be our pleasure to reciprocate with like favors.

The Alumni Association of the College of Physicians and Surgeons.—At the annual meeting of the association, held on June 10th, the article of the constitution governing membership was amended as follows: "All graduates of the College of Physicians and Surgeons in good standing in the profession, or engaged in other honorable occupations, may become members of this association upon notifying the secretary of such desire and upon payment of annual dues of three dollars." The association has decided to unite with the other alumni associations of Columbia College in joint social meetings. One of these meetings was held in November, 1894, and it proved to be a great success, some four hundred and fifty graduates being present. It is proposed to have one or more similar meetings each year. The association extends a cordial invitation to all graduates of the college to become members, and to unite in the promotion of the interests of their alma mater and the cultivation of social intercourse among its alumni and the alumni of the other schools of Columbia College.

A School of Medicine for Women at St. Petersburg.—In the *Progrès médical* for June 1st M. J. Roubinovitch says that Russia is at last to have what has been so long looked for—a school of medicine for women. On the 4th of May the question came up for discussion at the Council of State, and this time all the members of that assembly pronounced in favor of it.

All women under twenty-one years of age desiring to pursue the course must show a written permission from their parents or from a teacher, and married women one from their husbands. It will also be necessary to have a knowledge of Latin and Greek. The course of studies will extend over five years and will be exactly the same as that pursued in the faculties of medicine.

The women who receive diplomas at the end of their course of studies can not be admitted to the management of the general hospitals or to take part in the examinations by the boards of revision. A few among them, however, who may have distinguished themselves by a special practical experience, may be admitted as medical experts.

Many women in Russia, says the writer, are eagerly awaiting the opening of this school in order to avail themselves of the opportunity to study medicine. Many obstacles will have to be overcome, such as the necessity of understanding Latin and Greek, but Russian women, says M. Roubinovitch, are full of energy, and nothing will be too difficult for them to attempt in order to accomplish their medical studies.

The Northwestern University Woman's Medical College and the State Board of Health of Illinois.—At a meeting held in Chicago on June 25th the Illinois State Board of Health adopted the following:

Whereas, The faculty of the Northwestern University Woman's Medical College adopted a set of resolutions criticising the Illinois State Board of Health for having issued to three non-graduate students of said college the State certificate entitling them to practise medicine, who they maintain were not entitled to receive it, and charging the board with having adopted a lax policy in numerous other instances, thereby seriously detracting from the usefulness of the board; and

Whereas, Although the resolutions were "ordered to be placed before the Illinois State Board of Health," they were furnished to the various medical publications of the country simultaneously with their presentation to the board and before the board had opportunity to make any defense; and

Whereas, The said college has not made any investigation of the methods or policy of the board, and could not be in possession of information upon which to found such serious charges; and

Whereas, The secretary of the faculty admitted to the secretary of the board that the resolutions were adopted without due consideration, and were not so applicable to the present board; and

Whereas, In the past two years no certificate has been granted to any applicant upon an average rating of less than eighty per cent. in all branches, and the questions and examination papers and a tabulated record of all examinations are preserved and are matters of record in the office; and

Whereas, It is not in the province of the board to adopt any policy regarding the admission to its examinations of non-graduates, the law prescribing that "non-graduates shall submit themselves for examinations," and further prescribing that "the examinations shall be of an elementary and practical character." Therefore, be it

Resolved, That justice demands that the faculty of the Northwestern University Woman's Medical College and all others interested inform themselves as to the methods and policy of the Illinois State Board of Health in conducting its examinations, with a view to the establishment of the charges made or of making such withdrawal, alteration, or explanation of the charges as the facts may warrant, and, further, that the faculty inquire as to whether any individual interest or personal animosity prompted the drafting and circulating of the resolutions.

[Signed.] { B. M. Griffith, M. D.,
Sarah Hackett Stevenson, M. D.

The Northern Tri-State Medical Association.—The regular annual meeting was held at Coldwater, Mich., on Tuesday, July 9th, under the presidency of Dr. Frank M. Gier, of Hillsdale, Mich. The programme included the following papers: The President's Address—The Treatment of Acute Diseases; Adenoma of the Pharynx, by Dr. S. C. Backus, of Fayette, Ohio; Appendicitis, by Dr. J. H. Carstens, of Detroit; Some Observations on the Treatment of Corneal Ulcers, by Dr. Albert E. Bulson, of Fort Wayne, Ind.; Genu Valgum, with some Observations on Corrective Osteotomy, by Dr. Schuyler C. Graves, of Grand Rapids, Mich.; Exophthalmic Goître, with Report of Cases, by Dr. C. A. Dougherty, of South Bend, Ind.; Overlooked Anomalies of the Eyes, with Pronounced Nervous Reflex, by Dr. A. E. Bulson, of Jackson, Mich.; The Modern Methods of Wound Closure in Abdominal Surgery, by Dr. W. P. Manton, of Detroit; A Clinical Case, by Dr. D. H. Wood, of Coldwater, Mich.; Hysteria, by Dr. Frank B. Humphreys, of Fremont, Ind.; Tubercular Peritonitis, by Dr. L. H. Dunning, of Indianapolis; Some Personal Experience in the Management of Diphtheria with Antitoxine, by Dr. H. D. Thomason, of Albion, Mich.; Erysipelas, by Dr. H. T. Montgomery, of South Bend, Ind.; The Diagnosis, Pathology, and Treatment of Atrophic or Dry Catarrh, by Dr. John North, of Toledo; and the Treatment of Retro-deviations of the Uterus, by Dr. Charles N. Smith, of Toledo.

The World's Congress of Medico-climatology is an organization that is to hold a meeting in 1898. The corresponding secretary and committee on transportation, Dr. W. S. Rowley, corner of Thirty-fifth Street and Wabash Avenue, Chicago, requests all physicians interested in the study of climatology to send their names and addresses to him.

The Otsego (N. Y.) County Medical Society.—The annual meeting will be held at Cooperstown, N. Y., on Tuesday, July 16th, under the presidency of Dr. E. E. Dye, of Fly Creek. The programme includes the following papers: The President's Address—Pain or no Pain as Associated with Uterine Diseases; Chronic Oophoritis, by Dr. W. B. Campbell; Diseases of Children, by Dr. A. D. Blakely; Obituary of the late Dr. A. S. Seeber, by Dr. H. W. Boorn, of Schenevus; Reports of Cases of Appendicitis, by Dr. J. K. Leaning.

Law Students and Legal Autopsies.—The *Progrès médical* for June 18th says that, at Odessa, in order that law students may become familiar with the practice of legal medicine, they have been directed to assist at judicial post-mortem examinations. Future magistrates must in this way gain a fundamental knowledge of legal medicine, which is indispensable to them. However, says the writer, with the exception of a few, the law students will not consent to such a study, for it is repugnant to them, and they will not avail themselves of the opportunities given at the clinics in asylums and almshouses.

A Treatment for Warts.—The *Lyon médical* for June 19th publishes the following formula, attributed to Kaposi, of a mixture to be used in the treatment of warts: Flowers of sulphur, 150 grains; glycerin, 375 grains; pure acetic acid, 75 grains. Applications of this mixture should be made every day, and gradually the warts will become shriveled and dry and finally drop off. The mixture should be well shaken before it is used.

Original Communications.

NOTES ON THE FIXATION OF NERVE FIBRES BY FORMALIN.

By EDWIN M. KITCHELL, M. D.,
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With the exception of osmic acid, the older fixatives do not preserve without considerable shrinkage of the axis cylinder of the nerve fibre. Therefore, as formalin has in my hands given excellent results in the preservation of the axis cylinder, and as its effects on the myelin are also rather interesting, I have thought that it might be useful to publish a note on the subject.

The tissues used in my experiments were pieces of the sciatic nerves of the dog and of the rabbit, cut through their entire thickness. Even with pieces of tissue of this size, formalin penetrates and fixes the fibres throughout the nerve.

I used one, two, ten, twenty-five, fifty, and a hundred per cent. of the commercial solution.*

In the specimens treated with one- and two-per-cent. formalin the axis cylinder and myelin were both shrunken, as they would be by alcohol, for example. Ten per cent. causes less shrinkage than two per cent., but is still unsatisfactory.

In the specimens fixed in twenty-five, fifty, and a hundred per cent. the axis cylinder remains entirely or almost unshrunken in the majority of the fibres. The results were rather better with formalin of full strength.

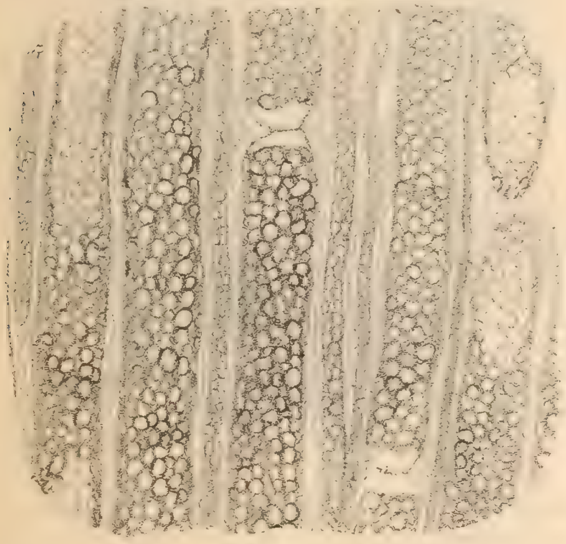

Fig. 1.

The diameter of the unshrunken axis cylinder under these circumstances is about 0·5 to 0·8 of that of the entire fibre.

I tried staining the nerve fibres fixed in formalin with acid fuchsine, eosine, and other aniline dyes, also Gage's hæmatoxylin (overstaining). All of these color the connective tissue strongly, while the unshrunken axis cylinder is but lightly stained. I thought Gage's hæmatoxylin rather the best.

Axis cylinders, on the other hand, which are considerably shrunken, are readily stained by these dyes. This may perhaps be explained by the concentration of the material taking the stain in a smaller space, which is the case when the axis cylinder is shrunken.

Transverse sections of fibres fixed in twenty-five- to one-hundred-per-cent. formalin solution show numerous little lines which run through the myelin in an irregularly radial direction. When viewed longitudinally the appearance is that of a fine network, the so-called neurokeratin network.

This network is much more distinct and regular than that seen in the myelin of nerve fibres which, for example, are fixed in Müller's fluid. It is well shown by staining with Weigert's hæmatoxylin (Fig. 1) or with iron-alum hæmatoxylin. By either of these methods the network is stained black, while the spaces between its meshes are colorless and appear empty.

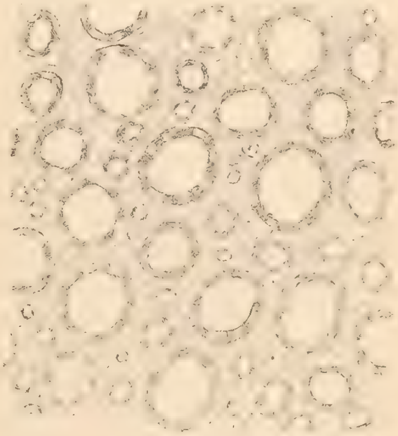

Fig. 2.

When stained by either of these methods the fibres, as seen in cross section, are of a somewhat different appearance from that already described, for, instead of the lines running through the myelin, black bands are seen with white spaces between them (Fig. 2).

Osmic acid stains the network (of the formalin hardened fibre) a faint brown.

The appearance of nerve fibres hardened in formalin is the same whether teased, stained, and mounted in glycerin, without the use of alcohol, or soaked in alcohol and ether, as for celloidin imbedding.

When nerve fibres (also tissues from the central nervous system) are stained by Weigert's method after formalin fixation, the reducing fluid should be diluted from five to ten times with water, otherwise the decolorization will be too rapid and uneven.

From the results above described it would appear that formalin is a valuable addition to the list of reagents for the fixation of nerve fibres.

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* This is a forty-per-cent. aqueous solution of formaldehyde.

AN ACEPHALIC OMPHALOSITE.*

By CHARLES E. NAMMACK, M. D.,
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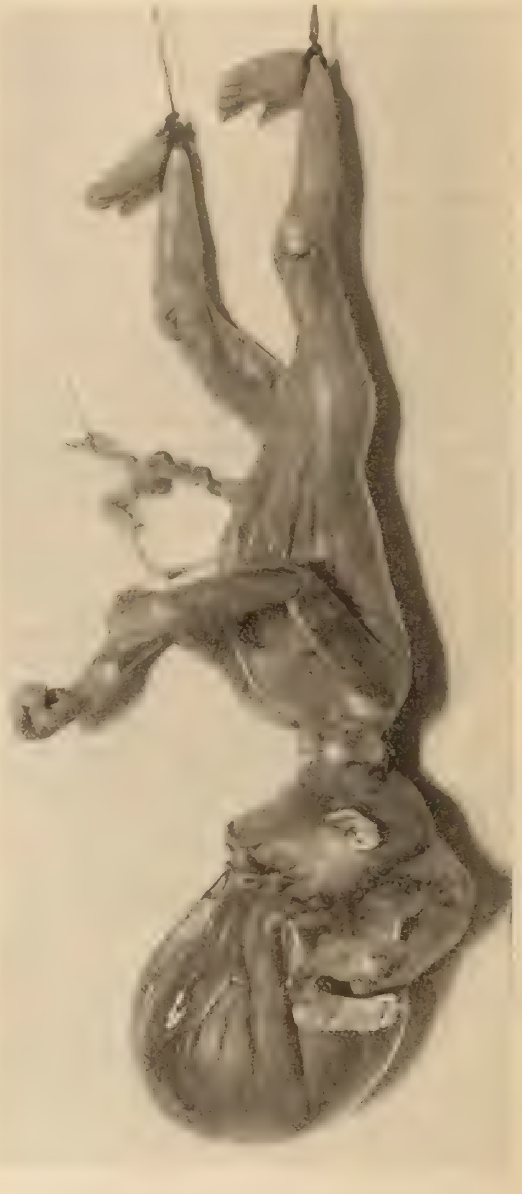
Ambulance Surgeon J. B. Pascoe was called to a woman who had miscarried, and found on his arrival the anomalous female fœtuses which are here presented. Following the classification adopted by Hirst and Piersol, the specimen belongs among the malformations produced by cleavage (either partial or complete) of the primary embryonal cell masses. Excepting the head, one fœtus seems to have undergone the normal development of the fifth month of pregnancy, while the parasite fœtus presents a curious instance of malformation and arrested development. The coexisting cyst is an example of a less rare condition—hydrencephalocele springing from the root of the nose. The latter malformation is, of course, produced by defective union of component embryonic parts. Opinions regarding the mode of production of these monsters are divided (Hirst and Piersol, *Human Monstrosities*, Part I, p. 24). Some hold that, starting as a twin pregnancy, one fœtus has a primary impairment of vitality which renders possible the usurpation by the other fœtus of the maternal blood supply. Others maintain that the arrest of development depends on external mechanical forces, and attribute the malformations to undue pressure induced by abnormal narrowing of the enveloping amnion. But Hirst and Piersol state (page 42) that the view that all multiple monsters arise from a single yolk, upon which two primitive traces are developed, is sustained by the most conclusive evidence. They further state (page 49) that where two embryonic traces lie with their cephalic ends near together, in the course of the development of the more active embryo the weaker may be drawn within and overgrown or surrounded by the parts of the stronger, so that finally the only trace of the weaker fœtus is found as a tumor attached to some part of the head of the more vigorous fœtus. This description fits the present case, the parasite being, in the main, a shapeless mass to which is appended one well-formed foot with seven toes, the other lower extremity being rudimentary, and the genital organs situated between the two. The case corresponds to the order of omphalositic monsters, an omphalosite being understood to be an embryo or fœtus dependent for its imperfect growth in the uterus upon another embryo or fœtus, usually well developed, that supplies the circulation of blood for both by means of extensive and intimate anastomoses of the umbilical and placental vessels (*ibid.*, p. 128). The developed fœtus is spoken of as the autosite.

Omphalositic monstrosities are divided into paracephalic, those having an imperfect head and four extremities; acephalic, in which there is a complete absence of the head and usually of the upper extremities, as in the case here reported; asomatic, in which there is more or less distinct indication of a head, but no trunk; and anideous or amorphous specimens, which are shapeless masses of flesh covered with skin. The acephalic cases are subdivided into (1) acephalus, the highest form, at least one superior extremity and a fairly developed thorax; (2) peracephalus, body reduced to pelvis and lower extremities; (3) mylacephalus, but a degree above that of fœtus amorphus or anideus.

Dr. George J. Fisher (*Transactions of the Medical Society of the State of New York*, 1865 to 1868 inclusive) includes under the technical heading Diploteratology all the varieties of abnormal duplication and supernumerary formation which have been observed in the human body. He defines compound monsters to be those in which the elements of two or more subjects, either complete or incomplete, are united. In his classification our specimen would be placed in the order of Terata Anadidyma, in which the cerebro-spinal axis is, to a greater or less extent, duplicated; genus Cephalopagus, in typical cases of which all the parts of two complete individuals are developed and the vital organs are distinct. Ours, however, is not a typical but a non-symmetrical case. This genus is divisible into two species only—namely, craniodidymus, in which



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* Specimen presented before the Section in Obstetrics and Gynæcology of the New York Academy of Medicine, May 23, 1895.

the junction is by the crania, and prosopodidymus, in which the coalition is by any portion of the faces.

In the unequal cephalopagus one of the component bodies is generally well developed, possessing independent vital organs, and the defective portion is supplied by vascular communication with the head of the main trunk, to which it bears the relation of a tumor, being a mere parasitic mass. The specimen here shown would then be classified, according to Fisher, as cephalopagus craniodidymus.

Ahlfeld (*Die Missbildungen des Menschen*) devotes plate No. 3 of his atlas to the cephalopagi, and his Fig. 10 of that plate represents a case which closely resembles ours. This is the case of Vollens, reported originally in Müller's *Archives*, 1850. The specimen was dissected and injected, and an interesting report can be found accompanying Ahlfeld's atlas.

29 East Twenty-fourth Street.

OBSERVATIONS ON
EXCESSIVE INTESTINAL PUTREFACTION.

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and E. E. SMITH, Ph. D.

(*Concluded from page 44.*)

The Treatment of Excessive Intestinal Putrefaction.—If we admit that the presence of putrefactive products in the urine in increased quantities is evidence of the occurrence in the intestine of an excessive degree of putrefaction, perhaps associated with a change in the kind of putrefaction, and if we admit, further, that such excess of putrefaction is frequently, if not always, related to or associated with symptoms, it is plain that any treatment directed to this condition should contemplate the reduction of the putrefactive processes in the intestine.

The object of treatment is not to stop all putrefaction—to render the intestine free from the presence of bacteria—but rather to bring the putrefactive changes which may advantageously take place in the advanced stages of intestinal digestion within the limits of the normal, as indicated by the output of putrefactive substances in the urine. And while the first-named object, of checking all putrefaction, is entirely impracticable, the latter object, of limiting putrefaction, is one which we may undertake in most cases with a reasonable hope of success. The means at our command for the accomplishment of this end comprise, first, drugs, and second, hygienic measures, especially of a dietetic nature.

The drugs which most naturally suggest themselves for use in diminishing excessive output of the sulphates are those thought to be capable of stopping or restraining the growth of putrefactive bacteria in the intestine—the so-called intestinal antiseptics. There seems to be a certain fascination about the thought that when we have loaded a patient's intestine with antiseptics we have not merely done our duty, but have acted in accordance with the most advanced teachings of science. There are many practitioners who appear to have implicit faith in such treatment in most gastro-intestinal disturbances. But there are others of equal experience and probably greater thoughtfulness who are inclined to question whether this treatment is either rational or effective, and there are some who go so far as to deny to it any efficiency whatever. It must be admitted that, on *a priori* grounds at least, there is not much to be said for the treatment. All effective antiseptics are irritants in some degree, and there is a limit, usually soon reached, to the amount of an antiseptic drug that can be put into the stomach without inducing pain, nausea, and vomiting, or the evidence of poisoning from absorption. For anything like effective disinfection of the intestinal tract, it is probable that the even diffusion of the drug through the gut contents would be essential. Yet such diffusion in adequate strength is not to be expected from the introduction of small amounts of a drug at infrequent intervals. It is likely that what we ordinarily do in our attempts to check putrefaction in the intestine by means of drugs is to distribute small, more or less thoroughly disinfected spots at intervals along the intestinal tube, the contents at the intervening places remaining unaffected.

How do these *a priori* notions accord with our practical observations? We know that while intestinal antiseptics fall short of high expectations they appear at times to do some good. We can not, however, measure this effect accurately by clinical criteria. Fortunately, we have at once an accurate and fair means of estimating their effect through the study of their influence upon the excretion of the ethereal sulphates. Since the quantity of these substances varies with the extent of putrefaction in the intestine (with few exceptions), a material reduction in their excretion, coincidently with the use of an antiseptic drug, may be fairly regarded as evidence that putrefaction is being inhibited, whatever may be the effect upon the symptoms. Similarly the absence of any influence upon the sulphates is evidence that the drug is ineffective. What has the study of the matter from this point of view taught us? We have made numerous observations upon several drugs, including hydronaphthol, beta-naphthol, salicylate of sodium, salol, and resorcin. It might be expected that definite conclusions would have been reached with regard to these drugs, but the difficulties of the study were such as to render this impossible. In the case of salol and resorcin it was found that these drugs are eliminated as ethereal sulphates, and hence they mask any effect which they may possess in reducing the aromatic products—an unfortunate fact from the standpoint of the investigator.

Judging from clinical evidence, however, we have no doubt that both these drugs, and especially salol, exert a decided effect upon putrefaction in the intestine. Many of the symptoms of intestinal indigestion (pain, flatulence, diarrhœa) are often rapidly relieved by the use of a two-grain dose of salol every hour. Though salol was employed in several cases in which there was an habitual presence of indican, no effect was observed in reducing it.

Both hydronaphthol and beta-naphthol were studied in several cases. Neither drug, in doses up to six grains three times a day, appeared to have any decided effect in checking the amount of the ethereal sulphates excreted. In larger doses they are usually not well borne. We may say without hesitation that in the doses first mentioned neither of these drugs is to be considered an efficient intestinal antiseptic in adults.

Salicylate of sodium, in doses of fifteen grains three times a day, may safely be recommended as a valuable intestinal antiseptic. In several observations made with it it showed a decided effect in bringing down the excretion of the ethereal sulphates toward the normal. In some cases also it exerted a marked influence in reducing the amount of indigo blue. The only objection to its use in the above-mentioned amounts is the irritation to which it gives rise in a good many cases. Some persons have taken it for years in these amounts, with only an occasional short intermission, and have had little to complain of. Others can not take five grains three times a day without untoward effects. In any case in adults where the amount is reduced below ten grains three times a day, salicylate of sodium is not likely to be of much service as an intestinal antiseptic. In the cases of epilepsy that are benefited by the reduction of intestinal putrefaction, salicylate of sodium has appeared distinctly more useful in modifying the frequency of seizures than any other drug mentioned.*

It must be owned that an effective intestinal antiseptic (using the word effective when the sulphates are appreciably reduced or brought within normal limits), which is generally useful and reasonably free from undesirable effects, remains a desideratum—one, we suspect, which will not be readily supplied.

In 1882 Wassilieff pointed out that calomel possesses antiseptic properties, and Baumann employed calomel in the belief that it is an antiseptic as well as a cathartic, in his classical observations upon the ethereal sulphates. He found, when he gave starving dogs a gramme of calomel for three or four days consecutively, that the urine remained free from ethereal sulphates—an indication that intestinal putrefaction had ceased. In view of this fact, the inference might easily have been drawn that calomel possesses decided antiseptic properties. But Morax found that moderate doses of calomel did not exert any appreciable effect upon the ethereal sulphates, and that they did not disappear except when enough calomel was given to produce copious watery stools. A still more recent observer, Stieff, found that doses of calomel as large as three tenths of a gramme (daily ?) had no influence whatever in reducing the aromatic sulphates. Another observation which must be admitted in evidence against the view that calomel is an intestinal antiseptic is that of Fürbringer, who found that the stools of typhoid underwent no reduction in the number of putrefactive bacteria while calomel was being administered.

We thus have conflicting evidence regarding the influence of calomel upon the aromatic sulphates. The probability seems to be that small doses of calomel have no effect upon the sulphates, while doses large enough to cause free watery movements diminish or abolish them. But the latter fact does not require us to assume that calomel is, properly speaking, an intestinal antiseptic. Its effect upon the sulphates doubtless depends upon its cathartic properties. Food which has been lying putrescent in the intestine is hurried through with such rapidity and such a derivation of water from the surrounding parts that there is little or no opportunity for the absorption of aromatic substances from the intestine. This view of the case receives some confirmation from the observation of Pouchet, who found the ethereal sulphates to be very greatly reduced in the stage of collapse in cholera. The observations already mentioned regarding the effect of croton oil also fall in line with this idea. While, therefore, we certainly can not look upon calomel as an intestinal antiseptic, we must be prepared to admit that it is capable, under some circumstances at least, of reducing the absorption of aromatic bodies from the intestine. It is not improbable that much of the good which calomel is recognized to do in intestinal disorders generally depends upon this interference with the absorption of aromatic and other putrefactive substances. To be sure, we know that benefit is obtained by the use of small doses (one grain or less), and we do not know that such doses reduce the sulphates, such evidence as we have being indeed opposed to this view. The observations we now have on the influence of calomel in reducing the ethereal sulphates are so fragmentary that we can not lay much stress upon them; they merely suggest an explanation of the beneficial effects of calomel, and we must wait for further work to confirm or disprove this suggestion. Yet the fact remains that in many cases where there is no apparent constipation, but the ethereal sulphates are too abundant and indican is present in large amounts, a moderate catharsis from time to time (once in five or ten days) from calomel has an unquestionable influence in the relief of the varied symptoms of intestinal indigestion. In some cases of epilepsy seizures may be at least deferred by this means. These effects of calomel are doubtless shared by other cathartics. Our own reliance has, however, been placed chiefly in calomel in small doses. In many cases of duodenal indigestion, especially when there was epigastric tenderness, the use of salts did harm, as shown by aggravation of local tenderness and pain. In other cases of intestinal indigestion the salts currently employed (containing sodium sulphate) have given rise to a bitter or other unpleasant taste in the mouth (suggesting regurgitation) lasting a day or more.

We come now to the treatment of excessive intestinal putrefaction by hygienic measures, especially diet. In order to approach this subject intelligently it is essential to bear in mind the influence of diet upon intestinal putrefaction in normal persons. We may suppose that we are studying this influence in a normal man weighing in the neighborhood of a hundred and fifty pounds. A man of this weight excretes from twenty to thirty grammes of urea daily—let us say for convenience that this excretion averages twenty-five grammes daily. We find that on a mixed diet, consisting of nitrogenous food (both animal and vegetable), carbohydrates, and fats, the quantity of the total sulphates bears a relation to the urea of 1 to 10 or 1 to 15, while the aromatic sulphates in their turn bear a ratio to the preformed sulphates of 1 to 10 to 1 to 15. Let us now suppose that the character of the diet is altered by excluding from the mixed diet all nitrogenous food of vegetable origin and by limiting the animal nitrogenous food to meat and milk. Let us assume further that the amount of proteid food eaten and assimilated is such as to keep the excretion of urea about where it was before—that is, about twenty-five grammes daily. We know from our experiments that under these conditions the ratio of the total sulphates to the urea would remain about where it was, but the ethereal sulphates, instead of maintaining a ratio of 1 to 10 to 1 to 15 to the preformed sulphates, would undergo a distinct diminution, so that the ratio would be changed to 1 to 15 to 1 to 25. If, instead of substituting an animal nitrogenous diet in the case proposed above, we had shut out of the diet all animal food and given all nitrogen in the form of vegetable food—that is, with the free use of the more nitrogenous cereals, as oatmeal, wheaten grits, and peas and beans—we should have obtained a very different result.

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* Since this was written we have made use of borax, in doses of five grains three times a day, with marked results in some cases of epilepsy (in conjunction with bromides) and in several cases of arthritis deformans (a condition which seems closely related to intestinal putrefaction). The only drawbacks to the use of the drug in these doses have been diarrhœa occasionally and eczema rarely.

With the quantity ingested so fixed as to give an excretion of about twenty-five grammes of urea daily, the ratio of the total sulphates would have remained about the same, while the aromatic sulphates would have increased to such an extent as to give us a ratio to the preformed of 1 to 5 to 1 to 10. As already pointed out at the beginning of this article, the total sulphates are no indication of the degree of putrefaction in the intestine, but represent the sulphates derived from nitrogenous food in process of metabolism, just as urea represents the nitrogen of proteid food in process of metabolism.

The total sulphates consequently vary with the activity of nitrogenous metabolism, and when they are reduced by a change in the diet from animal to vegetable nitrogen the ethereal sulphates may be in no degree decreased.

But we can not conclude from this that putrefaction has not been increased, because, had it not been, the ethereal sulphates would have been decreased in proportion to the total and preformed sulphates.

We are inclined to think that this difference in the readiness with which certain kinds of animal and vegetable proteid food undergo putrefaction in the intestine is intimately related to the digestibility of these foods and the readiness with which they enter into the nitrogenous metabolism of the body.

Animal foods, like milk and rare beef, are readily digested, but peas, beans, oatmeal, etc., require longer for their complete digestion, and have an opportunity to be a longer time in the intestine while the digestive process is going on, and probably more nitrogen is passed in the fæces, in proportion to the amount digested, than in the case of animal food, though of this we have no experimental proof.

In one case in which a normal man, on a mixed diet, was changed to a diet from which animal nitrogen was excluded and in which the free use of peas and beans was substituted, the amount of urea excreted was at once much diminished, although the appetite at first remained good, and there was no limit imposed on the amount of vegetable nitrogenous food taken.

Since we are able to thus regulate in some degree the extent of putrefaction in the intestine in normal individuals by means of diet, it occurs to one that excessive putrefaction may be modified by the same means. That excessive intestinal putrefaction may really be modified by means of diet we have been able to satisfy ourselves by ample clinical and chemical evidence obtained in the study of the conditions which have been already discussed. It is probably true that the ethereal sulphates can be reduced considerably by means of diet whenever they are in excess. The surest way of accomplishing this result is to put the patient upon a diet of which milk is the chief or exclusive constituent. In a person whose sulphates are running normally on a mixed diet, such a change of diet brings the ratio down to about 1 to 20, partly by an actual reduction in the ethereal sulphates, partly by an increase in the preformed sulphates. In a person whose aromatic sulphates are in excess on a mixed diet a similar reduction is brought about by a milk diet, but the reduction is not so great as in a normal individual, the degree of reduction being apparently proportioned to the degree of original excess. An exclusive milk diet, however, has its drawbacks, especially if it requires to be maintained for a considerable length of time, and it is generally wise to allow some carbohydrate food and meat, while a large part of the nitrogen taken into the body continues to be in the form of milk. The only indication for an exclusively milk diet is when the sulphates are enormously in excess and this excess is associated with symptoms which yield only when the sulphates are decreased by means of such a diet, and such cases are very uncommon. It appears to us that the principle which should underlie the treatment of all cases of excessive intestinal putrefaction is the idea of compromise ; we should aim to allow the patient as varied a diet as is consistent with the avoidance of intestinal symptoms, avoiding loss of weight and inadequate alimentation on the one hand and evidences of auto-intoxication on the other. As a rule we may be satisfied to keep the ratio between 1 to 8 and 1 to 12 ; but in one case headache and pains in the muscles made their appearance whenever the diet was so modified as to give a ratio lower than 1 to 18.

In every case where we wish to reduce the aromatic sulphates we believe it important to exclude from the diet peas and beans (excepting, perhaps, string beans in moderation), oatmeal, wheaten grits, pearled wheat, Indian meal, etc. We are convinced by both experimental and clinical evidence of the harm which these foods do in cases of intestinal indigestion. If it is desirable to allow some cereal, there is often no objection to white hominy, farina, or rice thoroughly cooked.

Where the ethereal sulphates are in excess it is difficult to say without trial how eggs will be borne. Without wishing to make a positive statement on this subject we believe that eggs are usually well borne, provided they are very soft, and badly borne if they are hard. From two to four eggs, boiled one minute, can generally be disposed of in the day by adults with intestinal dyspepsia, but there are exceptions to this rule, when the yolks, perhaps owing in part to the sulphur they contain, are responsible for headache, etc. We recall one instance in which from four to six soft-boiled eggs were taken daily by a dyspeptic, who could not take one hard-boiled egg without both local and general symptoms.

Meat, especially rare beef, is one of the foods best adapted to the treatment of cases of intestinal dyspepsia. In cases of acute intestinal dyspepsia a rigid meat diet (lamb chops, beef) persisted in for a few days brings rapid and sure relief from the symptoms. Game is to be avoided in such cases. In the majority of cases of intestinal indigestion with excessive putrefaction the free use of butter and fats generally seems to do no harm, but there are acute cases where fats are only imperfectly digested.

The use of kumyss in cases where intestinal putrefaction is excessive has been recommended by Rovighi, Pöhl, and others. Rovighi found that by taking daily a litre and a half of kumyss he was able in a week's time to reduce his ethereal sulphates from 1 to 10·7 to 1 to 20·3, and he concludes from this experiment that kumyss has a pronounced influence as an intestinal antiseptic. This he attributes chiefly to the lactic acid which it contains; but he admits that this only partially explains the results obtained with kumyss, for he found that large amounts of lactic acid had much less influence than the kumyss. We are prepared to admit the value of kumyss in cases where intestinal putrefaction is excessive, but it is not yet clear that it is superior to milk as a poor medium for the growth of putrefactive bacteria in the intestine. Rovighi found that the small amount of indican which his urine contained disappeared when he took kumyss.

We have spoken heretofore only of the influence of diet upon the aromatic sulphates as a group, without reference to the influence exerted upon the particular members of the group. As yet nothing is known of the relation of diet to the excretion of phenol-potassium sulphate and skatoxyl-potassium sulphate. The influence upon indoxyl-potassium sulphate, also, is but imperfectly understood. The general statement may, however, be made, that the dietetic conditions which reduce aromatic sulphates as a whole, reduce the quantity of indigo blue in the urine. But to this general statement there are important exceptions. In almost every case where indican is habitually present in large amounts it has been found that the sulphates were far more readily influenced by a change of diet than the indican, which may continue, for a time at least, almost unaffected.

In the cases of intestinal indigestion, on the other hand, where there is present only a moderate amount of indican, and this is associated with and due to the same conditions that cause flatulence, the indigo blue disappears promptly under dietetic treatment. We suspect that the cases which yield so slowly or not at all to treatment are generally those in which there is at some point in the small intestine, probably in the duodenum, a process of chronic catarrhal inflammation.

In the treatment of any case of excessive intestinal putrefaction the evil effects of physical overfatigue upon the course of intestinal digestion should be borne in mind. The influence of sexual excitement must also be remembered, and if there is evidence that digestion is hindered by the sexual act this should be so far as possible discouraged. This applies especially, though not exclusively, to males. The possible influence of masturbation in causing intestinal indigestion must always be remembered.

Where excessive intestinal putrefaction is associated with an excessive output of uric acid this condition should receive special attention, the influence of carbohydrates in the production of the excess being borne in mind.

Regarding the treatment of epilepsy in those cases where intestinal putrefaction is in marked excess, it must be freely owned that the results have not been encouraging. In a great many cases there has been brought about some improvement of a temporary character, by means of treatment addressed to the intestinal condition.* In fact, it may be said that some improvement has usually been observed in the number of *grand mal* seizures when an intestinal condition has been much improved. There are, however, many epileptics in whom the intestinal condition is so pronounced and of such long standing that we can do little to improve it. In such cases we can not, of course, expect improvement in the seizures. Then we must not lose sight of the element of cerebral instability which is brought about by the frequent, long-continued repetition of the cortical discharges. In adults with an established epileptic habit we can not reasonably hope to do more, through the treatment of the intestinal trouble, than to remove or diminish one of the conditions that influences the frequency of the epileptic discharge. In some instances this means material improvement.

In some cases of epilepsy in children we may reasonably hope to accomplish more. We have met with cases where after a prolonged period of dietetic indiscretion a child has had for the first time a series of epileptiform convulsions, which have disappeared for many months (the patients being finally lost sight of) after a careful correction of the dietetic error. It is likely that in children epileptiform seizures recur and become chronic through the non-correction of intestinal states, the element of cerebral instability being at first slight, but tending with each repetition of the epileptic discharge to the establishment of a habit. It can not be said that we have proof that this is so, for, from the nature of the case, it is difficult to say what would constitute proof, but it is sufficiently probable to make it worth while to pay particular attention to intestinal conditions in all recent cases of epilepsy in children in which careful examination and the history of the case render the existence of an organic cerebral process unlikely.

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* The following notes upon trials of intestinal antiseptics in epilepsy were furnished us by Dr. Frederick Peterson:

In one case a patient had under bromide treatment for two or three years an average of forty-five attacks of *grand mal* a month. Put upon salicylate of sodium only, the bromides being dropped, the fits were reduced in number at once to twelve a month. In three other cases similarly treated, either with salicylate of sodium or salol, a reduction of one half was made in the monthly number of seizures. These were cases that had been kept under long observation and were selected from sixty cases in Peterson's charge at the New York Hospital for Nervous Diseases. In two of his private cases improvement of like degree was observed upon following out this line of treatment. It is but fair to say that in half a dozen others no such good effects were obtained.

In conclusion, it may be said that while much remains to be learned, especially regarding the relation of the various individual putrefactive substances formed in the intestine to the symptoms of disease, enough evidence has been accumulated to show that excessive intestinal putrefaction is a not infrequent occurrence and is in some way related to the production of symptoms. Hence it constitutes a pathological condition whose recognition gives us at times distinct indications for treatment, which it may render both more intelligent and more effective. It remains for future clinical observation to establish the range of utility and the limitations of measures directed to the correction of this condition.

NOTE.—The methods of chemical analysis employed to obtain the results reported in this paper are:

Urea, estimated from the amount of nitrogen determined by the Kjeldahl method.

Uric acid, after the method of Salkowski, as modified by Ludwig and further modified by Groves.

Total sulphates, by weighing as $BaSO_4$ after the usual manner.

Combined sulphates, gravimetrically according to the manner described by Baumann and modified by Salkowski.

Indican, method of Jaffé, oxidizing with calcium hypochlorite and separating by shaking with chloroform.

A CLINICAL STUDY OF

THE ACTION OF NUCLEIN IN FEVER OR TOXÆMIA.*

By WILLIAM JACOBSOHN, B.S., M.D.

SINCE the publication of my last article (*Medical Record*, vol. xlvii, No. 18) upon this subject, I have had the gratification of seeing a more extended application of nuclein in disease. Therein I advocated its use in fevers which were produced by the microbes and their toxines. The action of nuclein was fully described. Not only has it been used in the condition of toxæmia with fever, but whenever there was manifested a toxic condition, and whenever there has failed to be present a natural immunity, it has been found to be indicated. I will attempt to present such clinical pictures as will clearly demonstrate the utility of nuclein, and to point out its indications and the details in the administration of the remedy. To avoid repetition and to economize space, I have decided to select from my records the following cases only:

Scarlatina.—On March 23d, Thomas A., aged two years and eight months, was brought to me by his mother, who said that the child had been taken ill on the previous night. He was restless and thirsty and felt hot, but he had neither vomited nor coughed nor shown any other signs. On examining the child, I found a rather indistinct scarlet-colored rash on his face, chest back, and buttocks. The throat was found to be hyperæmic, the palate, uvula, and tonsils being highly injected and swollen; the tonsils were covered with a secretion of puriform appearance which exuded from the follicles. The tongue presented the "strawberry appearance," and the lymphatic glands in the submaxillary region were enlarged. The pulse was characteristic, being extremely rapid—160; the temperature was 102·6° F. The child had no appetite and was dull. From these signs and symptoms it was plain that the child had scarlatina. At four o'clock I injected twenty-five minims of nuclein * solution.

March 24th.—On my morning visit the mother told me that the child had passed a restless night, having been what she judged feverish. This morning, however, the child had a better appetite than yesterday, was surprisingly lively, and got out of bed and walked around; the diet of milk which I had ordered did not apparently satisfy the youngster, for he ate a potato which he managed to get hold of; the bowels had moved this morning. Upon examining the child to-day, I find the rash, which had been very indistinct yesterday, now typical of scarlatina and distinctly marked. The throat showed a thick cheesy exudate. The cheesy mass of the tonsils appeared as if it was breaking down, and as if absorption was also going on. The temperature was 102·2° F., pulse 144, and stronger than yesterday. At 12 M. this day the child was injected with five minims of Leedom's nuclein solution. At 9 P. M. of this day the child felt well; drank his milk; temperature, 102 2° F.; pulse, 140; respiration, 32; he received an injection of seven minims of Leedom's nuclein solution.

25th.—I found the child getting along very well, very bright and active, and desiring to get out of bed; he had spent last night in a similar manner to the night previous. He drank quite a quantity of milk. His temperature at 11.30 I found to be 102·2° F.; his pulse was strong and not so rapid as on the 24th. The rash was well out. Injected five minims of nuclein † solution. In the evening at nine the temperature had fallen to 101·6° F. The child felt strong and did not complain. Injection of five minims given.

26th.—At 3 P. M. I found the temperature 100·9° F. The throat showed no signs of inflammation, and the granular, broken-down, cheesy exudation lay loosely on the tonsils; the glands in the neck were still slightly enlarged; the bowels moved; he took plenty of milk and chicken broth to-day.

27th.—Throat perfectly clean; the enlargement of glands in the neck was disappearing; rash going away; bowels moved to-day; child had a slight attack of nasal catarrh, as he was allowed to be exposed and to get out of bed by his parent; he coughed a little; no physical signs in the lungs; temperature is 100·6° F.; otherwise well and bright. His skin was oiled and Leedom's nuclein tablets, $\frac{45}{150}$, were given every four hours.

28th.—The child was still troubled with nasal catarrh, but coughed less; was desquamating all over the body; the temperature was 100·6°; slept quietly all last night. I continued the tablets.

29th.—At 10 A. M., temperature, 99·6°; the child slept well last night; nasal catarrh better; coughed very little; desquamation all over the body; the child was very bright and active.

30th.—The temperature was normal; cough had disappeared; the child felt well. Subsequent visits revealed no further complications and the child made an uneventful recovery.

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* Parke, Davis, & Co's. † Leedom's.

This case demonstrates what the remedy can do for a child living in a tenement house under the worst hygienic surroundings, uncared for by any nurse and allowed to get out of bed occasionally, though the latter was strictly forbidden. The child received no other treatment than the administration of nuclein and the oiling of the skin after desquamation had begun, in order to avoid the spread of the infectious particles of the skin.

Moreover, the advantage of the treatment in this case is shown by the fever being checked and not being allowed to rise, as it would otherwise with the more distinct appearance of the eruption. The latter has been more prominently brought out. The heart was strengthened, the pulse-rate was immediately reduced, and the child both mentally and physically felt better. The course of the disease was aborted, and the throat showed immediate signs of improvement; desquamation appeared earlier than usual.

Measles.—On March 24th I was called to see Irving B., aged two years. The mother gave me the following history: The child had been perfectly well until the evening of the 20th—*i. e.*, four days before—when it was taken with a convulsion. A neighboring physician was called, who found the child had a temperature of 103° F. The mother says he gave him a powder for the fever and medicine for the convulsions.

The next morning, when it again became feverish, the mother became alarmed and sent for her family physician, who diagnosticated the case as probably one of meningitis. The following day her physician found the temperature 104° F., gave powders and lukewarm baths, and followed these by a cold bath. The bath was not given by the physician himself, and as no friction was used thereafter, the child went almost into collapse. He spent a miserable night. The next day he had a temperature of 105° F., and the physician treated him by applying ice bags to the head and neck, and expressed himself to the family as being puzzled and desiring a consultation.

When I was asked to see the child the next day, about 11 P. M., I found him with a temperature of 103°, having a slight coryza and cough, a hyperæmic throat, and an indistinct rash which I diagnosticated as that of measles. I discontinued all previous treatment, and injected four minims of nuclein solution. Immediately after the injection into the buttocks the rash came out more prominently.

March 25th.—On inquiry, I found that after the injection last night the child had been feverish and restless. However, since 2 A. M. he had slept better. This morning he was sneezing and coughing, and the rash was distinctly out. The child laughed and played about and asked for a piece of bread. He was very lively and better than he had been since the beginning of his illness. His temperature was 101° F. At 1.30 he received an injection of five minims of nuclein solution. At 9 P. M. his temperature was 100·4° F.; bowels moved to-day; otherwise he was the same as in the morning.

26th.—The rash was no longer visible; there was a slight branny desquamation; the temperature was normal; the child appeared practically well.

27th.—The temperature remained normal. Further visits revealed no complications; the child had recovered completely.

Cecilia B., aged three years and seven months, sister of the above named child. When seen on March 25th she was coughing and sneezing, and presented the characteristic eruption of measles on the palate, face, chest, and back. Temperature, 100° F. Injected five minims of nuclein solution at 1.30 P. M. In the evening at nine I found the temperature to be 99; the child was feeling well, livelier, and her appetite was good; the rash was disappearing.

26th.—The temperature was normal; the rash had disappeared and was followed by desquamation. Subsequent visits revealed no sequelæ.

Ida C., aged seven years, living on the same floor but not in the same rooms with the two former children, had attended school until yesterday, when her mother noticed that she coughed and had coryza and conjunctivitis. These symptoms were followed by a rash which covered her face.

On examination, March 24th, I found the distinct eruption of morbilli on her face, chest, back, and buttocks, and already extending to the extremities. The throat, though hyperæmic, presented no exudation. The glands of the neck were slightly enlarged; the characteristic laryngeal cough was present. At 11 A. M., pulse 80 and weak; temperature, 99·3° F. Injection of five minims of nuclein solution. At 10 P. M. the child was bright and active; her appetite had returned so that she ate farina, milk, and soup; she coughed less; the temperature was normal and the pulse stronger.

25th, 2 P. M.—Temperature normal; the rash was rapidly disappearing and desquamation had begun. The child made thereafter an uneventful recovery.

From the foregoing cases of measles it will be seen that nuclein acts promptly and rapidly in checking any complication and in terminating the disease.

Diphtheria.—On March 23d Mary D., aged three years and four months, had been feverish, and since the morning had complained of pain in the throat. On examination, I found, in addition to a hyperæmic condition of the throat, an exudate on each tonsil. The mother told me that she herself had had a sore throat a week before, which had been pronounced by the health department to be diphtheria. Expecting that this child, who had a temperature of 103° F. and a pulse of 150 at 2.45 P. M., had diphtheria, I injected twenty minims of nuclein solution.

March 24th.—The mother said that the child had been restless and thirsty during the night. About 8 A. M. she looked pale, but later felt better, becoming very lively and walking about; she asked for a piece of bread; the bowels moved; the patient still complained of sore throat. Examination revealed a pulse of 125 and a temperature of 101·3°. The tonsils showed distinct membranes over both surfaces, which seemed already to be breaking down into a cheesy mass. I made a culture of the exudate, which on bacteriological examination showed the presence of the *Bacillus diphtheriæ*. The child received an injection of twenty minims of nuclein solution.

25th.—To-day the child was much better; her temperature was 100·2° F. at 12 M. There was very little exudate in the throat, which easily came away when washed. Appetite good; bowels moved; no injection given to-day.

26th.—At three o'clock the temperature was 101° F.; bowels did not move; both tonsils showed a cut-out appearance, over which appeared a granular, dirty yellow, cheesy deposit, which was not easily removable. Injected five minims of nuclein solution.

27th.—Temperature, 99·2° F.; membrane loosely detached over the tonsils and uvula; the child was lively and playing about; her appetite was so good that she ate every article of food. Injected five minims of nuclein solution.

28th.—At twelve o'clock, temperature 99·4° F.; the child had a slight attack of coryza and coughed a little; the membrane was still loosely attached.

29th.—At 11.30 A. M. the temperature was normal; the membrane was still visible in shreds; the throat was no longer hyperæmic or angry-looking; the child ate and slept well.

I visited this child daily thereafter: no attempt either by swab or by any local disinfectant was made to remove the shreds of membrane. I directed the mother simply to let the child gargle with salt water. A small shred of membrane persisted until April 6th, though the child was perfectly well in every particular, with no elevation of temperature, having a good appetite, playing and walking about. Despite the liberty the child was allowed, as, against my orders, she was permitted to get out of bed, no complications ensued. The child to this day is in perfect health.

Follicular amygdalitis and other anginas are promptly remedied by the injection of nuclein, repeating the dose in twenty-four hours according to the severity of the symptoms. The following case illustrates its action; only one injection was given:

Frank E., aged nine years, came to me on February 16th, complaining of severe frontal headache, pains in the epigastrium, vomiting, pains in the muscles of the neck, and loss of appetite, feeling tired and indifferent to his surroundings. On examination, both tonsils and pharynx showed a follicular inflammation. Temperature, 102·5°. Injected twenty minims of nuclein solution.

On the following day, February 17th, the throat showed no signs of follicular or other inflammation; the temperature was normal; the headache had disappeared; the appetite had returned and the patient was entirely well.

In cases like these nuclein exerts an immediate positive influence on the toxines in the system; for the aches in the body disappear, the difficulty of swallowing ceases, the temperature is reduced, the appetite returns, and the patient desires to resume his occupation.

Other indications for its use have been found in the fever of tuberculosis, typhoid fever, pneumonia, erysipelas, rheumatism, and in the auto-intoxications of the alimentary canal. In diphtheria, as illustrated in the cases cited above, it should be administered by the injection of five minims of Leedom's solution into the muscles of the buttocks or back. The dose should be repeated every twelve hours until the temperature has been lowered and controlled. Usually from five to six injections suffice for a case, very many patients needing less. In scarlatina, repeat five minims every twelve hours until five doses have been given. In measles, usually one dose, followed by another in twelve hours, suffices to control the disease. In follicular amygdalitis likewise, two doses given at intervals of twelve hours apart will terminate the disease. In malarial fever, I have found that it rapidly reduced the temperature and prevented the recurrence of the paroxysm. Repeat the dose at the time of the expected attack. Rheumatism is decidedly benefited; the pains are immediately relieved by a hypodermic injection.

Administration.—Nuclein is best administered hypodermically or deep into the muscles of the back or buttocks; for in this way its action is prompt, as it is directly introduced into the circulation. Moreover, in children, no such struggle is encountered as when it is administered by the mouth. An ordinary hypodermic syringe, which must be sterilized before using, may be employed. Care should be taken to have the part thoroughly cleansed with some antiseptic. I have never known an abscess or any peculiar rash follow the injection of nuclein. There are a number of preparations on the market. Parke, Davis, & Co.'s nuclein solution requires four times the quantity for each dose as does Leedom's, of Philadelphia. Nucleins extracted from animal cells are preferable to others. Reed & Carnrick have also a product which is furnished in tablet and powder form. It is often convenient to employ Leedom's or Reed & Carnrick's tablets, especially when a local action is desired, as in the gastric auto-intoxications.

Immunization.—This must in the future play an important rôle in preventive medicine. It is a well-known fact that certain persons have always been found who, in spite of the most destructive epidemics, have escaped being afflicted with the disease. This has not been due to their vigilance, or quarantine, or any measures adopted for their self-protection; on the contrary, these persons have either purposely exposed themselves, or, mindful of their duty to attend their afflicted fellow-creatures, have been compelled to be amid the sick. Have we not often been amazed at the stories, which appeared almost miraculous, of persons sleeping in the very beds with those dying from communicable diseases, such as variola, diphtheria, tuberculosis, etc.? Physicians have been at a loss to explain the reason why such persons should not have contracted the disease.

Believing that the body must contain the antitoxine which destroys the microbes and its poisons, and that this antitoxine must be nuclein, I have made an injection of this substance whenever the person has been exposed to a communicable disease. I have found that diphtheria, measles, and scarlatina, the only diseases in which I have made the experiments up to this writing, can be prevented by a timely injection of nuclein. It occurs to my mind that the other communicable diseases may likewise be prevented. The persons receiving the injections have been those directly exposed and living in the same apartments with the patients. No quarantine was used; the dose given was five minims of nuclein solution.

Failures, and the Use of Other Remedies in Conjunction with Nuclein.—Owing to a great amount of septic poisoning or toxæmia, and the complicated pathological processes induced by the action of the toxines upon the tissues, in spite of all our endeavors we occasionally meet with failures. Were it possible to avert these by permitting all the poisoned blood to run out of the body and to replace it with healthy, fresh blood, and by generating new tissues, we should succeed in these cases. Nuclein acts by furnishing a sufficient amount of Nature's antitoxine to overcome the poisons in the body, provided these poisons have not too thoroughly saturated the system.

Shall nuclein be used alone or in conjunction with other remedies? When one is acquainted with the special action of nuclein he may add the use of other remedies. When the case is severe, our patient desires the benefit of more than one remedy, and we are not justified either in depending upon nuclein alone or in doing without nuclein. Careful hygiene, diet, and watchfulness of the attendants will assist in saving the patient.

In my cases presented above, I have depended upon nuclein alone, so that it may be manifest what a powerful and valuable remedy we have.

152 EAST EIGHTY-SIXTH STREET.

THE TREATMENT OF LARYNGEAL TUBERCULOSIS,

*WITH A REPORT OF CASES.**

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"IT is not very long ago that phthisis of the vocal apparatus was looked upon as a *noli me tangere*, as an affection which meant certain and not far-distant death. Yet quite a large number of cases have now been recorded and demonstrated on the post-mortem table in which tubercular ulcerations have healed, leaving healthy cicatrices." This quotation from the President's address (McBride (1) of the British Medical Association) may serve as a fitting conclusion to the introduction of my paper read in June, 1891, before the Colorado State Medical Society (2), adding weight to the opinion which was then rapidly gaining advocates, on account of the proofs which over three years have developed. When we consider the radical changes made in our conception of this disease and its treatment, we must acknowledge that only writings of recent times can be of any value; and of all authors Heryng, of Warsaw, and Gouguenheim, of Paris, stand easily as the leaders.

In my previous paper I enumerated at some length a great variety of remedies and forms of treatment, and hinted at certain conclusions. The general tone of that paper can not be altered by our more mature consideration after four years of additional experience in the treatment of laryngeal tuberculosis. It is certainly not necessary to add the names of many new remedies, for it can not be denied that medicinal treatment has rapidly made way for the surgical method. The forms of treatment by and analogous to tuberculin, modified and otherwise, have gradually fallen by the way and are practically relegated to the past. Senn's dictum (3), "Away with Koch's lymph!" which he promulgated because of the great liability to general dissemination of the process, was among the many fatal condemnations this remedy received. Even the allied remedy thiosinamin, which Zendziak (4) carefully investigated, gave negative results.

The positive statements of the few and the impressions of the many, in 1891, that "cures occurred both spontaneously and under treatment," have been reversed into impressions of the few and positive belief of the many. That spontaneous cure occurs is now incontrovertible. Heryng (5) collected about three thousand cases of laryngeal phthisis, in fourteen of which spontaneous healing occurred. Grayson's case (6) has been largely quoted. Numerous other authentic cases have been reported from time to time. As to cures after treatment, there still exists some doubt in the minds of some observers, although the vast majority agree that they do occur. Heryng stands foremost in reporting sixteen cases (7) in which a cure existed for periods varying from two to six years, the time under observation. In Cohen's case, in which he removed the epiglottis, the patient remains alive and comparatively well after twenty-two years (8). Browne (9) reports a case of cure after treatment by Krause's method, remaining well at the time of reporting, or three years after treatment. Gleitzman reported a case at the Tenth International Medical Congress in 1890 (10), and again on October 25, 1894 (11), referred to the same case as still cured, a period of five years. Bosworth, however, states (12) that "he was very enthusiastic about a cure twenty years ago, but longer experience has not proved the correctness of his early views."

Before concluding as to the cure or curability of cases of tuberculous laryngitis, it is necessary to define exactly what class of cases is included in the diagnosis. Instances of syphilis, of chronic catarrhal laryngitis, of catarrhal ulcers, of pachydermia, are all likely to be cited as tubercular. Pulmonary tuberculosis may be associated with a variety of non-tubercular laryngeal lesions and thus may arise a wide difference in statistics. Schroetter (13) found laryngeal tuberculosis in 6·08 per cent., while Mackenzie (14) found it in thirty-three per cent. of cases with pulmonary phthisis. The existence of chronic catarrh of the larynx in phthisical subjects is very common, and while it can not be considered as tuberculosis of the larynx, it must be looked upon as predisposing to its development in this organ. This view was insisted upon in my former communication (15) and is supported by Thrasher, Wolfenden (16), Heinze, and others.

Pachydermia laryngis presents conditions sufficiently distinct to avoid error in diagnosis, and still, as Michelson (17) states, it may greatly resemble tuberculosis, and may be found with tuberculosis in the same larynx. A case should not be considered tubercular unless the laryngoscope reveals a fairly diagnostic image, and in collating my cases I depend upon the peculiar tumefaction of the epiglottis or of the arytænoid cartilages, the presence of yellowish nodules, the existence of superficial ulcerations, or characteristic deep destruction of tissue. These signs may exist alone or combined, and when taken with the history and systemic conditions make the diagnosis positive. It is true that at times much doubt may arise, especially in very incipient cases; here the tubercle bacilli may assist; but too much dependence should not be placed upon their presence, for they by no means decide that a chronic laryngeal catarrh in a tubercular patient is tubercular.

Purely medicinal treatment, as before stated, has but few adherents, and still we must acknowledge that there remain several remedies and methods of medicinal treatment which have been of much value. Insufflations of iodoform with morphine, tannic acid, and other medicaments have always been highly lauded by Bosworth. It forms one of the most satisfactory plans of procedure today in cases unsuited for surgical measures.

Intralaryngeal injections have certainly produced marked improvement in some of my cases both in the laryngeal and pulmonary symptoms. A solution of menthol, twenty per cent. in glymol, acts as an antiseptic, anæsthetic, and stimulant, relieving the pain, diminishing the cough, and giving the patient a feeling of general well-being. Downie (18) injects two drachms of a mixture containing twelve to twenty per cent. menthol, two to four per cent. guaiacol, and olive oil or vaseline. Bronner (19) recommended injections of salol or a combination of menthol and salol or guaiacol. Chappel (20) recommends the following: Creosote (beechwood), ol. gaultheria, each two drachms; ol. hydrocarbon, one drachm; ol. ricini, three drachms. This he uses either as a spray, an intralaryngeal injection, or by submucous injections, and reports remarkable results. I have used this only in a few cases, but the disagreeable taste, the severe pain, and aggravation of the cough caused me to discontinue its use. I used the intralaryngeal injection and found but one beneficial effect, that of cleaning the ulcerations, giving the granulations a more active appearance.

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* Read before the Pueblo County Medical Society, May 13, 1895.

Schmidt's method of incising the swollen tissues and that of injecting lactic acid subcutaneously have not met with universal approval; in fact, the results seem to be rather negative.

Lactic acid alone is of much value in superficial ulcerations, but not where the membrane is intact (Cohen (21)). It should be used in ten to eighty per cent. strength, and is capable of doing harm if used too strong or on unbroken mucous membrane. Its value is directly proportionate to its proper use both as to the nature of the lesion as well as to the method of its use. Thoroughness and friction in its application are essential.

Heryng states (22): "Superficial tubercular ulcers of the vocal cords, or deeper but isolated ulcerations of the epiglottis, false cords, or arytænoid region, even though they be covered or surrounded by soft granulations, are most quickly excited to cicatrization by treatment with twenty-five- to eighty-per-cent. solution of lactic acid." Schroetter (23), who is most conservative in his handling of this subject, believes lactic acid to be the best remedy of any medicament as yet named.

The treatment known as surgical, or that by currettement alone or in conjunction with rubbings of lactic acid, has certainly at the present time more to its credit and a larger following than any other. Heryng, who is the father of this method and its strongest adherent, is still not so biased or sanguine as to report healing in any but the most favorable cases. In most instances he alleges nothing more than palliation (24). MacIntyre may be classed as among the most conservative when he says (25) scraping and medication are often hopeless; while Wright (26) voices the sentiments of the opposite side in the statement that "We can not fail to admire Dr. Heryng's courage, but we can not share it."

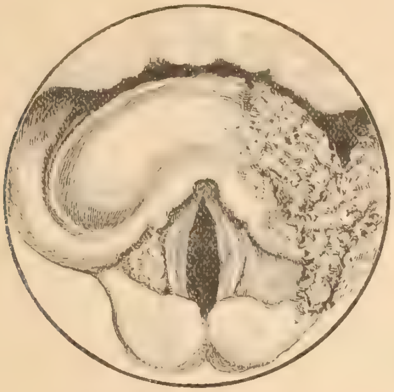
About ten years ago Heryng, of Warsaw, introduced the use of the simple curette; Krause, of Berlin, followed with a double curette; then came Gouguenheim, of Paris, with his "*emporte-pièce*," similar to Krause's instrument. Various modifications and extensive experiments by these masters and others but little less eminent have developed a form of treatment of which the most skeptical must take cognizance. The principle upon which this treatment depends is "to limit the tubercular infiltration, to localize it and clean ulcerations," and to "endeavor to convert a tubercular into a benign ulcer" (27). Further, the objects, as stated by E. Fraenkel (28), are "to follow, step by step, the exciting cause of the disease, and either to directly remove the resulting diseased products in the tissues, or, by introducing medicated substances, to influence them so that a destruction of the injurious agent is effected." Of course, this presupposes the correctness of the view held by Fraenkel that the tubercular changes in the larynx are to be referred to an invasion of bacilli from the surface and not by escape of bacilli from blood-vessels and lymphatics, thus penetrating from within. The *rationale* of this treatment for the relief of pain is thoroughly proved by Gouguenheim, who believed dysphagia to be due to certain nerve lesions. Danzac (29), studying the histological changes, concluded that there existed a "proliferation of the nervous terminations of the peripheral nervous filaments—a veritable neuroma of regeneration." The removal of this nervous tumor by surgical procedures is followed by disappearance of pain. Relief from dyspnœa may in like manner be obtained; and still there are not a few cases in which the treatment by curettement should not be applied. It is contraindicated in very weak patients with high fever, in very nervous patients, in those whose general condition is so low as to indicate speedy death, and in those who would be much depressed by a few days of increase of local pain. Patients who change doctors frequently, as Heryng says, are unsatisfactory subjects for this form of treatment. Much of the success following surgical measures here depends on the thoroughness of the operation, the site of the lesion influencing this, and the after-care. It is my plan after operation to spray the throat daily with a solution of pasteurine or with Dobell's solution, followed by insufflation of iodoform alone, or with morphine if there be much pain. Of all the forms of treatment as yet devised for laryngeal tuberculosis, the surgical, as exemplified by curettement, supplemented by rubbings of lactic acid, stands easily at the head, for no other method can boast the number of cures, nor can any offer more rational and logical premises. Other surgical measures have from time to time been advised. *Electrolysis* and the *galvanic cautery* are considered by Heryng (30) as of some value, but slow in their action, the latter leaving an eschar which may excite inflammation. These same objections are supported by Gouguenheim (31). Schmidt's advocacy of *tracheotomy* has not had many followers. Gouguenheim considers it only in the light of an auxiliary (32); Browne condemns it in all cases, performing it only at the request of the patient, even if urgent dyspnœa exists (33). Two cases have come under my observation in which severe dyspnœa due to perichondritis and œdema disappeared without recourse to tracheotomy, although it was urgently advised. So radical a measure as *laryngectomy* has been advocated by some, but only to be severely condemned by others.

The *climatic treatment* is necessarily of intense interest to us. Wagner's belief that great altitudes improved laryngeal tuberculosis in case the pulmonary disease was benefited is still quoted. Very little light has been shed upon this subject. Solly concludes (34) that "in earlier and medium cases high altitudes, with appropriate treatment, afford relatively, though not actually, as good a chance of arrest or delay in laryngeal as in pulmonary tuberculosis." Heryng holds (35) that a change of climate can not be substituted for local treatment, but admits its value in such exceptional and mild cases as undergo spontaneous cure. My own experience is based upon accurate records of two groups of cases—the first group of thirty, reported in 1891 (36); the second group of forty-two, observed since then, a table of which is appended. In this latter group the same plan of arriving at conclusions is used as in the former, except that the effect of Colorado is noted at the time of first observation, and an additional column of ultimate result is affixed. The ultimate result is estimated from the last personal knowledge of the patient, making it somewhat more correct than in trusting to reports of patient or friends. In those instances in which the patient improved until leaving Colorado and then grew worse, the condition during residence here is used in arriving at the following conclusions: Of the forty-two cases, the lungs were improved in thirteen, worse or unchanged in twenty-nine; the larynx was improved in twelve cases, worse or unchanged in thirty. Of the cases in which the lungs were improved, the larynx grew worse in three instances. The ultimate results of the thirty cases reported in 1891 show two remaining improved out of seven then improved; five of the twelve improved cases remain unknown as to results. The results as shown by the second group, observation of which has extended over a period varying from three months to four years, are more encouraging than in the first group. But the ultimate results of the first group, observation of which extends over more than four years, bring the general conclusions to a somewhat less favorable aspect. And still, judging from these seventy-two cases and many others treated in hospital and dispensary of which records have not been kept, I can not but believe that under proper treatment laryngeal improvement will go *pari passu* with that of the lungs. Of the cases apparently contracted in Colorado I can not but believe that they were not influenced in attacking the larynx by the climate, but developed as a natural secondary complication. That one case developed here is, however, beyond question, and the history of this patient is given in another place. Gardiner reports ten cases of pulmonary tuberculosis contracted in Colorado in none of which any laryngeal lesion existed (37). The case whose history leaves no doubt as to its having developed in Colorado shows also much in favor of its being primary laryngeal tuberculosis. It is not my purpose to discuss the question of the actual occurrence of a primary laryngeal affection. Wolfenden states that this question can be of little more than academical interest (38); and still, were it positively settled affirmatively, surgical treatment might avoid secondary complications. Doubtless many cases have been reported as primarily of laryngeal origin in which pulmonary lesions were present but undetected. That the larynx may be primarily affected is certain from the report of Demme's case (39), so frequently quoted. Here a child died of tubercular meningitis; a post-mortem revealed laryngeal tuberculosis and no pulmonary invasion. The only evidence that the case here reported was one of primary laryngeal tuberculosis is in the fact that a careful examination of the lungs revealed no physical signs pointing to pulmonary invasion. Two months and a half after beginning treatment the lungs showed unmistakable signs of involvement, the disease running a very rapid course.

CASE I.—Mrs. W. H. K., aged thirty-three years, consulted me May 5, 1894. Has been married eleven years, during which time has been twice pregnant; the first child died at birth, the second, born three years ago, remaining well to date. Was born in St. Louis, coming to Colorado twelve years ago, since which has lived here permanently. Complains of huskiness of voice, a sensation of "lump" in the throat, and "stitches" on swallowing. Has been suffering with these symptoms for two weeks, having taken cold about that time. Patient gives a history of having had a severe cough lasting six weeks about six years ago, and an attack of pleurisy affecting the right side two years ago. Recovered perfectly from both. Failed slowly after last pregnancy, three years ago. Her family history is negative, except that one sister died after having a cough and hoarseness, but never sick enough to see a doctor until toward the end; supposed cause of death, lung trouble. Patient's usual weight is a hundred and three pounds; is anæmic; temperature at 3 P.M., 100° F.; pulse, 100, soft. Slight night sweats of late; coughs in the morning; scanty expectoration; examination for bacilli by Dr. Axtell, negative; appetite is poor, bowels constipated, menstruates regularly; patient's voice is distinctly dysphonic, and there is slight pain on deglutition, radiating to right ear. Laryngoscope reveals left arytænoid cartilage red and swollen; right arytænoid cartilage and arytæno-epiglottic fold swollen, pale gray, and covered with muco-purulent secretion; over right arytænoid there appear several small superficial ulcerations extending posteriorly. Careful examination of lungs revealed normal vesicular murmur throughout. The treatment consisted in rubbing with lactic acid, alternating with insufflations of iodoform, tannin, and morphine, supplemented by constitutional remedies such as creosote, etc. The disease progressed rapidly and steadily, intense dysphagia, complete aphonia, and emaciation appearing. In the early part of June Dr. Waxham confirmed the diagnosis. In July Dr. Hawkins saw the case with me and examination of the lungs revealed dullness and moist râles in the right apex. The patient succumbed September 13, 1894.

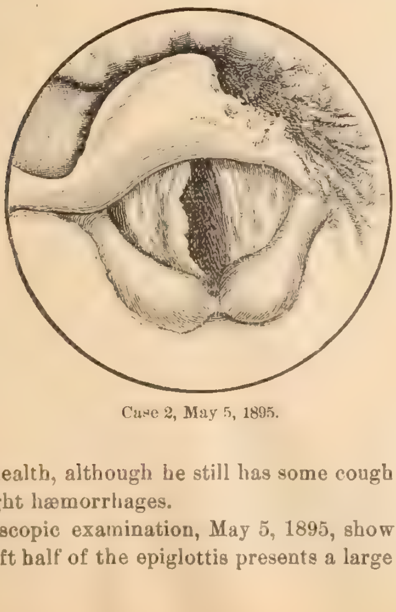
The evidence is clear that this patient contracted her trouble here, although at no time surrounded by tubercular patients, therefore free from infection. Whether the larynx was first affected or not is open to question, of course, but the most conscientious examination revealed no pulmonary complications until two and a half months had elapsed.

CASE II. *Tubercular Laryngitis; Cure.*—W. E. G., male, aged twenty-five years; occupation, a clerk; first consulted me October 22, 1891, having been referred by Dr. Munn. Patient arrived in Colorado October 20th, having lived in Pittsburg. Complains of great pain in swallowing and aphonia. Has been sick about a year, having lost his voice six months ago. Has never had any serious illness until the recent one. Is married. Has not had syphilis. Weight, ninety-eight pounds; temperature, 102° F. at 3 P. M.; pulse, 128; coughs considerably, appetite poor, general condition failing. Laryngoscope reveals œdematous, turban-shaped epiglottis, large ulcer on its left half, extending down arytæno-epiglottic fold. Large flat ulceration over right ventricular band; arytænoids pyriform, mucous membrane irregularly thickened throughout the larynx. Examination of lungs by Dr. Munn showed marked though slight affection of both apices; no breaking down of pulmonary tissue.



Case 2, October 22, 1891.

The treatment consisted up to December 2d in insufflations of iodoform and morphine and general tonics. Upon this date the pain in swallowing was less, the ulcerations being the same, but œdema and inflammation had somewhat subsided. Iodoform, menthol, zinc iodide, and a variety of local remedies were applied at different times, but without any marked or permanent improvement. January 20, 1892, the ulcerations were curetted and lactic acid, twenty per cent., applied. The reaction was not severe, and frequent subsequent rubbings of lactic acid were made. A rapid improvement took place; the ulcers cleaned and finally cicatrized. Resorcin, tinctura ferri chlor., and iodine solutions were alternately used, and the infiltration slowly became less, the patient assumed his usual occupation, his voice gradually improving. His last treatment was August 22d, 1892, although frequent examinations were made until February 4, 1893. His present condition is excellent as to general health, although he still has some cough and has occasional slight hæmorrhages.



Case 2, May 5, 1895.

Laryngoscopic examination, May 5, 1895, shows the following: The left half of the epiglottis presents a large notch bound to the ary-epiglottic fold by a firm cicatrix, otherwise the epiglottis is normal; right vocal band slightly irregular in outline, ventricular band thicker than normal; left vocal band thickened as well as ventricular band and interarytænoid fold. No ulcerations to be seen, although sites of former ones are thickened by cicatricial tissue. The left crico-arytænoid joint moves less freely than the right. There is absolutely no pain, and the voice is loud, though low in pitch and slightly husky. The condition here is affirmed as one of cure on account of the cicatrices in the sites of old ulcerations and the restoration of the laryngeal functions. The irregular thickenings are attributed to the remnants of the original hyperplasias. There has been and is now no return of the ulcerations, although a period from August 22, 1892, has elapsed—two years and nine months.

As to the *prophylactic*, *general*, and *palliative* treatment of tubercular laryngitis, nothing new has been developed in recent years. The general acceptance of the contagiousness of tuberculosis compels observance of those rules of isolation, etc., which hold good in the prevention of other communicable diseases. I desire, however, to reiterate the warning that it is necessary to place the upper air-passages in as hygienic and sanitary a condition as possible in order that chronic laryngitis and pachydermia laryngis may not be re-enforced by tubercular deposits. The general treatment with reference to systemic medication, the application of tonics and specifics, should here be followed out with the same persistence and judgment that characterize the administration of these remedies in pulmonary tuberculosis. In order that the best possible vitality may be preserved, *feeding* becomes an important and serious question, and in those cases in which great dysphagia exists the stomach tube and application of palliatives should be thoroughly and systematically followed out. The method of feeding by the inclined-plane position or that described by Wolfenden offers many advantages, and in certain instances becomes a great boon to the patient. As to the strictly palliative treatment, the application of cocaine or morphine administered both locally and constitutionally affords relief in many instances, but is not always reliable. Browne, in the *Journal of Laryngology and Rhinology* for April, 1894, p. 189, recommends local painting of the parts with a mixture of compound tincture of benzoin, compound tincture of camphor, tincture of belladonna, and yolk of egg.

Whether we accept the surgical and lactic-acid treatments for their curative effects or not, I am convinced that judicious application of these substances not infrequently affords great relief to our patient. Instances have occurred where cocaine, morphine, and a variety of palliatives afforded no relief whatever; upon application to the ulcerations of a fifty-per-cent. solution of lactic acid these patients became extremely comfortable so far as the pain was concerned.

Even heroic curettement has given some patients complete relief from pain in swallowing food after the immediate effects of the operation had subsided. I have no hesitancy, therefore, in offering as the *best palliative* at our command a judicious application of *lactic acid*, or *curettement*, or *both combined*.

No.	Name.	DURATION OF DISEASE.		WHBRE CONTRACTED.		EFFECT OF COLORADO UNTIL DATE OF EXAMINATION.		Length of residence in Colorado.	Results at last report.
		Of lungs.	Of larynx.	Disease of lungs.	Disease of larynx.	On lungs.	On larynx.		
1	F. A. R.	1½ years.	1 year.	New York.	New York.	Worse.	Worse.	3 months.	Returned East; died.
2	L. S. W.	2 “	6 months.	Pennsylvania.	Pennsylvania.	Improved.	Improved.	6 “	“ “ “
3	C. H.	1½ “	1½ year.	Wisconsin.	Wisconsin.	Worse.	Worse.	1 year.	“ “ “
4	T. S. C.	3 “	1½ “	Ohio.	Ohio.	“	“	2 months.	Unknown.
5	C. G. C.	16 months.	8 months.	Pennsylvania.	Pennsylvania.	“	“	2½ “	Died.
6	R. O.	9 “	2 “	New York.	New York.	“	Improved.	6 “	Returned East; no report.
7	A. McA.	1 year.	1 year	New York.	New York.	“	Worse.	2½ years.	Worse.
8	J. G. B.	1 “	3 months.	Pennsylvania.	Colorado.	“	“	2 “	Died.
9	W. T. W.	1 “	1 year.	Illinois.	Illinois.	Improved.	Improved.	9 months.	Unknown.
10	E. H.	13 months.	8 months.	Colorado.	Colorado.	Contracted.	Contracted.	6 years.	Died.
11	J. N. L.	2 years.	1 year.	Nova Scotia.	New Jersey.	Improved.	No change.	2 months.	Went to Texas; improved.
12	J. L. P.	14 months.	9 months.	Virginia.	Virginia.	Worse.	Worse.	6 “	Died.
13	C. H. T.	16 years.	10 years.	Michigan.	Michigan.	Improved.	Improved.	8 years.	Worse for 1½ year; returned East; died.
14	F. C. Z.	3 “	3 “	Ohio.	Ohio.	“	“	3 “	Improving.
15	J. W.	3 “	9 weeks.	Rhode Island.	Colorado.	“	Worse.	6 weeks.	Returned East; worse.
16	F. W.	4 months.	4 months.	Ohio.	Ohio.	No change.	Improved.	1 month.	No change; too recent.
17	J. W. T.	1 year.	3 weeks.	Colorado.	Colorado.	Contracted.	Contracted.	4 years.	Died.
18	A. W. J.	2 years.	1 year.	Massachusetts.	Colorado.	Improved.	Worse.	2 “	Growing worse.
19	C. O. J.	15 months.	14 months.	Ohio.	Ohio.	“	Improved.	10 months.	Improving.
20	G. R.	2 years.	2 years.	Ohio.	Ohio.	“	Worse.	7 “	Growing worse.
21	C. R.	6 months.	5 weeks.	New York.	New York.	Worse.	“	1 month.	Died.
22	W. G. N.	2 years.	23 months.	Pennsylvania.	Pennsylvania.	“	“	17 months.	“
23	R. E. McI.	4 “	4 years.	Ohio.	Ohio.	Improved.	Improved.	1 month.	Improving.
24	W. J. McK.	18 months.	18 months.	Massachusetts.	Massachusetts.	“	Worse.	4 months.	“
25	J. H. L.	4 years.	3 weeks.	Kentucky.	Colorado.	Worse.	“	5 “	Growing worse.
26	J. L.	1 year.	11 months.	Missouri.	Missouri.	Improved.	“	7 “	“ “
27	M. J. K.	14 months.	1 month.	Illinois.	Colorado.	Worse.	“	1 month.	Unknown.
28	K. K.	3 years.	1 year.	New York.	New York.	“	“	11 months.	Died.
29	W. H. K.	....	2 weeks.	....	Colorado.	....	“	12 years.	“
30	L. J.	2 years.	1 year.	Dist. of Columbia.	Dist. of Columbia.	Worse.	“	1 year.	Growing worse.
31	D. B. F.	3 “	15 months.	Pennsylvania.	Pennsylvania.	No change.	No change.	2 weeks.	No change; too recent.
32	W. K. E.	8 months.	5 “	New York.	New York.	Improved.	Improved.	5 months.	Improving.
33	S. C.	11 “	12 “	New York.	New York.	“	“	8 weeks.	Unknown.
34	C. P. C.	1 year.	1 year.	Illinois.	Illinois.	Worse.	Worse.	5 months.	Growing worse.
35	M. B.	10 months.	9 months.	Illinois.	Illinois.	“	“	6 “	Died.
36	W. C. A.	14 “	7 “	Illinois.	Illinois.	“	“	5 “	“
37	W. E. G.	1 year.	1 year.	Pennsylvania.	Pennsylvania.	Improved.	“	2 “	Larynx cured.
38	R. C.	2 years.	6 months.	Colorado.	Colorado.	Worse.	“	6 years.	Died.
39	W. H. R.	5 “	4 years.	Pennsylvania.	Pennsylvania.	Improved.	Improved.	3½ “	“
40	E. S.	2½ “	2 “	Michigan.	Michigan.	“	“	2 “	Improving.
41	H. B. H.	1 year.	6 months.	Maryland.	Maryland.	Worse.	Worse.	5 months.	Died.
42	F. E. H.	2 years.	7 “	Ohio.	Ohio.	“	“	4 “	“

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32. *Ibid.*, August, 1894, p. 510.
33. *Op. cit.*, p. 425.
34. *Therap. Gazette*, Nov. 15, 1893.
35. *Jour. of Laryng., Rhin., and Otol.*, May, 1894, p. 228.
36. *Op. cit.*
37. *Am. Jour. of the Med. Sciences*, July, 1892.
38. *Jour. of Laryng., Rhin., and Otol.*, November, 1891, p. 454.
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The College of Physicians and Surgeons, of St. Louis.—Dr. Bransford Lewis having resigned his position with the Missouri Medical College, has been elected professor of genito-urinary surgery in the College of Physicians and Surgeons, and genito-urinary surgeon to the Baptist Hospital.

THE DISCOVERY OF ANÆSTHESIA,
AND THE ALLEGED RELATIONS BETWEEN DR. C. W. LONG AND DR. P. A. WILHITE.

By LUTHER B. GRANDY, M. D.,
ATLANTA, GA.

A CENTURY rich in discoveries and inventions which have blessed mankind has not furnished one more important than the introduction of anæsthesia. How that was done is a familiar story. The contestants for the honor of that great discovery have now gone to their reward, and another generation has assigned each his own place in relation with the discovery.

After Dr. Marion Sims presented to the medical profession a detailed description of the work of Dr. Crawford W. Long in connection with the discovery of anæsthesia in 1842, the facts and evidence adduced were accepted, and the strength and reality of Dr. Long's claims were duly recognized.* Opponents of Dr. Long have made some very feeble attempts to answer this argument of facts and to cast doubts upon the evidence presented in his favor, and to belittle the experiments and operations performed by him in 1842 to 1845. These efforts have already received all the notice which they deserved, and the friends of Dr. Long and of his cause will probably not honor them with further consideration, at least not until stronger foes arise than have appeared thus far.

In view of the results it is to be regretted that Dr. Long did not make prompt announcement of his work. In that event the ether controversy would never have been heard of. His reasons for not doing so have been amply explained by himself and others. He knew something of the rise and fall of "discoveries" prematurely announced, of which medicine then, as now, furnished plenty of examples. He wished only to make assurance doubly sure. A patient seeker after truth, he withheld his cases from precipitate publication, though they were the talk of the small community in which he lived. He had no thought of utilizing such a beneficent discovery for the base purposes of money-making, and reputable physicians will commend his course as ethical and honorable. As regards the final judgment of history on the merits of his claim his friends will rest his case where he left it in 1849: "This being the case [that is, his delay in publication pending further trials of ether—L. B. G.], I leave it with an enlightened medical profession to say whether or not my claim to the discovery of anæsthesia is forfeited by not being presented earlier, and with the decision which may be made I shall be content. My only wish about it is to be regarded as a benefactor of my race."

But the object of this paper is to discuss another phase of this matter. In the able and convincing presentation of the evidence by Dr. Sims, which in most respects left nothing to be desired, there appeared one error particularly which should not go down in medical history unrefuted. I have made brief allusion to this error in another article.† Dr. Sims's paper had its origin in an interview with Dr. P. A. Wilhite, of Anderson, South Carolina, when the latter was on a visit to New York in October, 1876. Wilhite stated that he was the first person who ever profoundly etherized any one; that at a quilting party near Athens, in the fall of 1839, he and his friends in sport caught a negro boy and etherized him to a point of complete and alarming narcosis, and that after a deep sleep of an hour or more he was aroused only by the aid of a physician who had been sent for; that early in 1842 he and three other young men were students in Dr. Long's office when the latter was experimenting with ether and weighing in his mind the question of using it in surgery; that he encouraged the doctor by relating the negro-boy incident above alluded to; that the first surgical test of ether was soon made, and that he assisted in the operation and in subsequent operations. This is the pretty little story as related by Wilhite, put on record and indorsed by Sims, and reproduced in several places of high authoritative value.* All of it I believe to be *fiction pure and simple—falsus in uno, falsus in omnibus.*

It will be remembered that Dr. Long's first operation under ether was on March 30, 1842, and that between that time and January 8, 1845, four or five other operations were done, all, however, of minor character, such as the amputation of fingers, the removal of small tumors, etc. The dates and descriptions of these may be found in the paper of Dr. Sims, and also in my own above mentioned. I have affidavits collected by Dr. Long from parties who witnessed these operations, but none from Dr. Wilhite. On the other hand, when the ether controversy was going on in Congress and Dr. Long was preparing to submit his case along with the claims of Wells and Jackson and Morton, he asked Wilhite for a statement as to what he knew about these operations, and the following certificate was given under oath:

> ANDERSON DISTRICT, S. C., *February 4, 1854.*
>
> I entered the office of Dr. C. W. Long, of Jefferson, Ga., in October, 1844, where I continued about eighteen months. Not long after I entered his office, and not later than 1845, I heard the said Dr. Long speak of having used sulphuric ether by inhalation to prevent pain in surgical operations, *he referring to a period of time before I entered his office.* [Italics mine—L. B. G.] Among other instances of which mention was made was the removal of tumors from the neck of J. M. Venable, of which I heard Dr. Long and others who witnessed the operation frequently speak, and my impression is that I heard Venable himself speak of the operation in high terms as having been performed without pain, etc. P. A. WILHITE, M. D.

In this certificate, which seems to have been carefully worded, certainly nothing shows about any suggestion or assistance which he might ever have rendered. But with the lapse of time and of memory Wilhite appears to have imagined that he had been more closely identified with those events than is indicated in the above statement. Sometime after Wilhite had had his talk with Sims he wrote Dr. Long as follows:

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* The Discovery of Anæsthesia. By J. Marion Sims, M. D. *Virginia Medical Monthly*, May, 1877.

† A Contribution to the History of the Discovery of Surgical Anæsthesia. By Luther B. Grandy, M. D., Atlanta, Ga. *Virginia Medical Monthly*, October, 1893.

* *Pharmacology, Materia Medica, and Therapeutics.* By Lauder Brunton, M. D., London. *Anæsthesia and Anæsthetics.* By H. M. Lyman, M. D., Chicago. *The Discovery of Modern Anæsthesia.* By Dr. L. W. Nevius, New York. *Transactions of the South Carolina Medical Association*, 1883. *History of Surgery in South Carolina.* By Dr. E. F. Parker, of Charleston; etc.

Anderson, S. C., *January 16, 1877.*

Dr. C. W. Long:

Dear Doctor: I have just received a letter from Dr. J. Marion Sims, of New York, stating . . . that he wrote to you about three weeks ago and had received no reply. If you don't do so soon it will be too late. He has been preparing an article for publication, and wants to place you right before the world. You have been apprised, I suppose, of the nature of the article. Why you have been connected with and will be the leading spirit in the article happened in this way: While I was in New York last summer at one of Dr. Sims's private operations, several prominent physicians being present, I happened to remark that I witnessed the first or second operation ever performed under an anæsthetic. Every one said that I was mistaken, and particularly Dr. Sims. . . . After that I met Sims at his office and gave him such particulars as I could recollect of your first operation, and also urged your claims to the priority. He at once wrote you on the subject, and has since become very much interested in the matter.

Now, doctor, it is but justice to you, as it is due the world, that you give Dr. Sims such information as he asks for at once, as he is going to all this trouble only to place the proper credit of this great discovery on the man who justly deserves it. I earnestly hope you will comply with the doctor's request as soon as possible. . . . As I have been the means of giving the investigation of this subject its present shape, I am exceedingly anxious that you should give all the information you can, that you may, and justly too, receive the credit of this great discovery. If you will act, it will certainly be so. . . .

Hoping to hear from you, I remain yours, etc.

P. A. Wilhite.

Long at once reminded Wilhite that he was not present at either of these operations, and asked him to send Sims a certificate similar in character to the one above quoted. Wilhite replied:

Anderson, S. C., *January 27, 1877.*

Dr. C. W. Long:

Dear Doctor: Yours of the 22d is at hand, and I have also just received a letter from Dr. Sims, which I will answer to day. In regard to the certificate you spoke about, it will not be necessary, I think, as Dr. Sims has my statement written out in full. He was very particular to get all the points and facts I could recollect. In my statement *I did make a mistake about my being present at the first or second operation, which mistake I will correct.* (Italics mine—L. B. G.)

If you still think proper, I will send a certificate. Let me know and I will give you any assistance in this great matter.

Yours truly, P. A. Wilhite.

Sims's paper appeared in May *with the mistake uncorrected.* There were also two or three other errors of less consequence. Dr. Long asked Sims to correct them; the latter replied that he could not do so then, as he was about to sail for Europe; besides, the "misplacement of a few names and dates would not alter the main facts in the case." Dr. Long died a year later.

Thus from Wilhite's own testimony we learn that he did not become a student of Dr. Long until the latter had done several operations under ether. To confirm this further I have here a statement from Dr. Long's *first student.* This was John F. Groves, afterward a successful practitioner of medicine. He is still living and has lately written as follows:

Cohutta, Ga., *December 13, 1894.*

. . . I entered Dr. C. W. Long's office in May of 1844 as the first student ever under his care. As I progressed with my studies he saw fit to make known to me his discovery, by the use of which he could perform surgical operations without giving any pain to his patient. He also gave me an account of how he was led to make this discovery.

[Here follows an account of how the young people in Jefferson used to assemble and inhale ether in sport, and how they would sometimes receive bruises and sprains in their intoxication without complaining of pain until they had recovered from the effects of the ether; also an allusion to Dr. Long's early operations.—L. B. G.]

In the two years preceding my entering Dr. Long's office he had had only about six cases in which to try the anæsthetic effects of ether. The first case that came under his care where its use was applicable after my going into his office was not till January 8, 1845, which was the case of a negro boy having two fingers to amputate, caused by a neglected burn. I was the only student still with the doctor, and he had me to accompany him to see the operation and assist in the administration of the ether. The first finger was removed while under the influence of ether, the little fellow evincing no pain; the second, without ether, the child suffered extremely. There were two gentlemen present as witnesses of the whole proceedings. In this case Dr. Long used ether in one amputation and not in the other, to prove before competent witnesses that the insensibility to pain was due to the agent used to produce that effect. Being the same patient, at the same time, and operations of like magnitude, it would prove to the public mind that anæsthesia was a settled fact.

Soon after this, in January, Mr. J. D. Long came into the office as a fellow student, later toward spring came P. A. Wilhite, and in August came Dr. Long's brother, H. R. J. Long. Thus there were four students together, I the first to enter.

It never entered my mind to doubt that Dr. Crawford W. Long was the *original* and first discoverer of modern anæsthesia. The claims of all other men paled beside the facts that prove his priority. His own statements of his reasons for not sooner publishing to the world his discovery only show the conscientious, cautious nature of the man, and add strength to his claim. . . . J. F. Groves, M. D.

Dr. Groves's statement that Wilhite never became a student of Dr. Long until the spring of 1845 is confirmed by other affidavits in my possession. Therefore he not only never assisted in any of these early operations, but he never even witnessed one.

Now, as to the etherization of the negro boy, alleged to have been done "playfully and unintentionally" at a country quilting party near Athens in the fall of 1839. Even if this incident ever occurred at all, and Dr. Long and young Wilhite were not thrown together until some time in 1845, I fail to see what bearing it could have had upon the doctor's discovery. But it is more than likely that this gay circumstance was also a myth. Again I will allow Dr. Wilhite to impeach his own testimony.

A few months ago a daughter of Dr. Long's received the following letter from a well-known physician in South Carolina, whose name I am requested to withhold for the present. The letter throws some light on the whole subject:

Florence, S. C., *October 22, 1894.*

Dear Madam: Pressing engagements prevented me from replying earlier to the letter you did me the honor to address to me in regard to the claims of Dr. Wilhite to the discovery of anæsthesia. . . . Dr. Wilhite was a colleague of mine on the State board of health, and several times he took occasion to narrate the circumstances under which the discovery was made. Having witnessed frequently the effect of nitrous-oxide gas, and having none at the time, it occurred to him that sulphuric ether might produce a similar effect, and as an experiment he administered the latter to a negro boy who was in the office [Dr. Long's office—L. B. G.] at the time. To his surprise and horror the boy became profoundly insensible, and, thinking his death was inevitable, he and a fellow student had their horses caught and brought to the door with the view of fleeing into Tennessee. Before carrying this design into execution the boy aroused from the effect of the anæsthetic and was as well as before. The next day he told Dr. Long what had occurred, and expressed the belief that the boy was so profoundly insensible that a surgical operation could have been performed on him without causing pain. Not long after, Dr. Long removed a tumor from a patient under the influence of ether without the patient feeling any pain. . . . When Dr. Parker, of Charleston, read his paper on the History of Surgery in South Carolina at Sumter in 1893, I criticised his paper before the association because he had not made allusion to the discovery of anæsthesia, the credit for which was due, I thought at that time, to Dr. Wilhite. Dr. Parker made the changes in his paper in accordance with these views. This article came to the notice of Dr. Grandy, of Atlanta, who wrote me in regard to it. Dr. Grandy informed me that he had access to the papers of Dr. Long, and would prove by papers, letters, and affidavits—some of them from Wilhite himself—that the latter had not the slightest claim to the discovery. I must confess that this information was quite a surprise to me, and was so inconsistent with the estimate I had formed of Dr. Wilhite's character that I was loath to believe it. Dr. Grandy sent me his paper, and the truths he adduced were so overwhelmingly convincing that, biased as I was, I could no longer doubt that the credit of this discovery belonged *exclusively* to your father. When the work of Dr. Lauder Brunton on *Materia Medica and Therapeutics* first appeared, I mentioned to Dr. Wilhite that the author had given him due credit for the discovery of anæsthesia in his article on that subject. He was much pleased at the mention of his name by Dr. Brunton in connection with this discovery. It now passes my comprehension how, in the light of subsequent developments, he could have allowed me to leave his presence without telling me in all frankness that the credit was due to Dr. Long and not to himself. . . .

The fatal discrepancies in the two stories about this "first profound etherization" are too apparent to require particular comment. There is something wrong with the doctor's testimony somewhere. If this incident occurred at one time and place, it could not have occurred at another. If it ever occurred at all, at either time or in either place, it could have been of no use whatever to Dr. Long. So we may leave this point, as well as the others involved in Dr. Wilhite's claims, to the gentle mercies of his own statements, and trust to the discriminating and truth-seeking reader of history to decide what lot and part Dr. Wilhite had in the first discovery of anæsthesia.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JULY 20, 1895.

THE SANITARY IMPORTANCE OF CLEAN STREETS.

That clean streets are conducive to human comfort and health, no one can doubt. That very filthy streets are a source not alone of discomfort, but of disease, is admitted by all sanitary authorities and by all intelligent persons who have given any attention to the subject. It seems, therefore, reasonable to assert that, since filthy streets breed disease, the more thoroughly the filth is removed the better, and that absolute cleanliness, could it be attained, would remove a distinct danger to public health. It is probable that few rational people will deny the truth of this assertion; but, unfortunately, absolute cleanliness is not possible, and the practical question has to be considered of how thorough our efforts in its direction should be in order to reduce the danger so far as possible without at the same time wasting money in needless and futile attempts to attain the ideal condition. In other words, we must settle as to what degree of street cleaning "pays." This question has recently been presented in a concrete form to the board of health of this city, and we are glad to learn that that body has recorded its opinion that a far higher standard than any established before the administration of Colonel Waring ought to be maintained, and that the board of estimate and apportionment has authorized an issue of bonds sufficient to meet the greatly increased outlay of money above the appropriation originally made for the street cleaning department, which more efficient work requires.

This action of the health board has been made the subject of considerable adverse comment in a certain section of the public press, and we are sorry to note that hardly a word has been spoken in its favor. It must be admitted that the health board might have helped some of Colonel Waring's predecessors with quite as much reason as there is for its recent action, but "better late than never." It is the duty of the medical profession to take an active part in furthering all plans calculated to improve the public health, and we feel justified in directing attention to the sanitary importance of clean streets, and in asking members of the profession at large to do all in their power to aid the city authorities in their good work. The power of the profession to influence public opinion is enormous, and the power of public opinion to help or hurt public officials in their work is still greater. Public opinion is really the one irresistible force in our government. Backed by it, an official can do almost anything; opposed by it, he can do nothing; while if it is indifferent in regard to some course decided upon by an official, he may succeed in doing much, but his success will depend entirely upon his personal ability to work under a heavy strain.

Let us first consider what we know about the dangers of dirt. We know, beyond all question, that certain disease-producing bacteria flourish in filth. We know, also, that at least one species (the most deadly of all when the absolute number of its victims is considered), the *Bacillus tuberculosis*, is carried in the form of dust from the sick to the healthy, and that it is a frequent constituent of street dust. These things we know, and Dr. Prudden has shown that street dust literally swarming with bacteria is frequently carried high in the air. We know, also, that city dust is in large part composed of the excreta of horses and other animals, and we are surely not without reason when we assert that the inhalation of powdered horse dung and other excrement, mixed with various substances which have been more or less soaked with horses' urine and that of other animals and, further, mixed with the dried expectoration of numerous human beings in various states of disease or health, together with fragments of different kinds of offal, is disgusting and extremely likely to be injurious to health. Almost equally disgusting is it to carry this unspeakable mixture with us into our houses in the form of mud upon the clothing. The fact that in hot weather, when the windows are open, the filth makes of itself a portion of our meals which, though not mentioned in the bill of fare, is served with more or less profusion *gratis* with every portion of food, is an additional reason for objecting to dirty streets; and our objections become stronger when we think how often, at all seasons of the year, it must contaminate the milk supplied to little children and invalids.

It is not infrequently asserted that we have no absolute proof that, as a matter of fact, disease is caused by city dirt. This is quite true, but can any sane man deny that there are strong reasons for believing that disease is produced by pathogenic bacteria contained in this dirt? We know that the *Bacillus tuberculosis* is capable of distribution with dust, and it is quite possible that the same is true of a number of other disease germs. Whether or not pathogenic bacteria are thus distributed, no one can deny that such dust is injurious to the respiratory organs, and it must be remembered that upon any one who asserts that the introduction of filth such as this into the body is harmless rests the burden of proof of his assertion quite as much as it would had he stated that it was harmful.

Turning now to the situation in this city, we find the death-rate high in comparison with what it ought be, and we know that the streets, up to the beginning of the present administration, were not clean. While not justified in stating that there is unquestionably any relation between these two facts, we have good reason to believe that there is. Under the circumstances it is the plain duty of the health board to recommend cleaner streets, and it is our duty to indorse such a recommendation.

MINOR PARAGRAPHS.

MILK ADULTERATORS AND THE NEW CITY MAGISTRATES.

Two of the new city magistrates seem to have an utterly inadequate conception of the harm that may result to the people of New York if infractions of the sanitary code prohibition of the sale of impure milk are suffered to go unpunished. This may be inferred from their having discharged two dealers recently arrested by a health inspector. In one of the cases the magistrate appears to have based his action on the dictum that "justice should be tempered with mercy!" Which are the more deserving of mercy, the innocent infants destined to be fed with adulterated milk or the tricksters who deal in that product?

THE *INDEX MEDICUS.*

We are happy to say that Dr. Sajous's appeal and example have begun to bear fruit, and that there seems to be some probability of the profession's guaranteeing to the publisher a fund sufficient to justify him in reviving the *Index Medicus.* Dr. A. Jacobi, of New York, with his usual public spirit, writes to us from Lake George as follows: "In accordance with your suggestion, I offer to continue my two subscriptions for the *Index Medicus* at fifty dollars annually, instead of the twenty I paid before." Surely enough more prosperous physicians ought to be found to insure the carrying out of this praiseworthy undertaking.

AN OMISSION TO GIVE CREDIT.

In our issue for March 2d we published an article on Insomnia in Surgery, and its Treatment, by Dr. George G. Van Schaick. In the *Centralblatt für Chirurgie* for June 29th there is an abstract of this article, with the author's name given as "G. van Schack," in which credit is given to the *Aerztliche Rundschau.* As the *Rundschau* is not among our exchanges, we are uncertain as to whether the omission to give proper credit is attributable to that journal or to the *Centralblatt.*

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 16, 1895:

DISEASES.	Week ending July 9.		Week ending July 16.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	21	1	14	6
Scarlet fever	46	3	44	3
Cerebro-spinal meningitis	0	1	4	4
Measles	219	25	170	17
Diphtheria	182	34	192	30
Small-pox	0	0	0	0
Tuberculosis	161	107	133	81

The Consecration of a Masonic Lodge in a Hospital.—The *Lancet* for July 6th says:

"Saturday last was a red-letter day for St. Bartholomew's Hospital. In the great hall of the hospital a new Masonic lodge was consecrated, named after Rahere, the founder of the hospital seven and a half centuries ago. Everything combined to make the function a success—a bright and sunny summer's afternoon, the presence of H. R. H. the Prince of Wales, the grand master, and a brilliant representative gathering of those whose names are equally well known in masonry and medicine.

"At five o'clock lodge was opened, the master's chair being occupied by Brother E. Letchworth, grand secretary. Shortly afterward the Prince of Wales arrived, accompanied by the Crown Prince of Denmark, who is grand master of the free-masons of his own country. The Earl of Lathom, pro-grand master of England, acted as consecrating officer and then took the chair. He was supported on his right by the Prince of Wales and the Crown Prince of Denmark, while the senior warden's chair was occupied by Lord Roberts, of Candahar, grand senior warden, the junior warden's chair being filled by Lord Skelmersdale. The duties of director of ceremonies were undertaken by Brother Frank Richardson; the Dean of Gloucester, grand chaplain, acted as chaplain; and Brother P. H. Waterlow, past grand deacon, as inner guard.

"The brethren received the two grand masters in due Masonic fashion, and accorded to each the salute due to his rank. The lodge presented a very brilliant spectacle, over three hundred grand officers and brethren being present. Among them we noticed: Viscount Dungarvan, provincial grand master of Somerset; Colonel Le Gendre Starkie, provincial grand master of East Lancashire; General Laurie, past grand warden; W. M. Stiles, grand treasurer; Rev. Cooper Smith, D. D., past grand chaplain; Lennox Browne, past grand director of ceremonies; R. Loveland Loveland, president of the board of general purposes; R. Horton Smith, Q. C.; H. F. Frost, grand organist; E. Cutler, Q. C., past grand organist; Dr. Balfour Cockburn, provincial grand master of Guernsey and Alderney; Dr. Hugh Mackintosh and Brother Charles Martin, past assistant grand directors of ceremonies; the Earl of Euston, provincial grand master, Northamptonshire and Huntingdonshire; Alderman Walter Vaughan Morgan; General J. C. Smith, past grand master of Illinois. There were present a large number of medical brethren, including Brothers Reginald Harrison, Henry Morris, Edmund Owen, W. P. Herringham, Samuel West, Arbuthnot Lane, A. A. Bowlby, R. J. Reece, Essex Wynter, Leopold Hudson, Howard Tooth, Albon Doran, W. H. H. Jessop, Bruce Clarke, H. J. Waring, C. A. Parker, Danford Thomas, and F. W. Clark.

"The impressive ceremony of the consecration was proceeded with, the Earl of Lathom giving the invocation, while the Dean of Gloucester delivered the oration, and the anthems were sung by Brothers Frost, Kenningham, Fryer, and Stubbs. The grand master then constituted the lodge, the following officers being appointed; Brothers Clement Godson, M. D., P. G. D. (W. M.); Thomas Trollope, M. D., P. G. D. (acting I. P. M.); Alfred Cooper, F. R. C. S., P. G. D. (S. W.); W. J. Walsham, F. R. C. S., P. M. (J. W.); D'Arcy Power, F. R. C. S., P. M., P. G. J. W. Warwickshire (Treas.); T. G. A. Burns, M. R. C. S., P. M., P. P. G. D. Surrey (Sec.); Walter Gripper, M. B., P. M. (S. D.); Phineas S. Abraham, M. D. (J. D.); G. H. R. Holden, M. D. (I. G.); F. Swinford Edwards, F. R. C. S., P. M. (D. C.); J. H. Gilbertson, M. R. C. S., P. M., P. P. S. G. D. Herts (Stwd.); C. B. Lockwood, F. R. C. S., W. M. 1150 (Stwd.); C. P. White, M. B. (Stwd.); Ernest Clarke, F. R. C. S. (Org.); Madden, Librarian of St. Bartholomew's Hospital (Tyler).

"Among the other founders of the lodge are Brothers W. Haig Brodie, B. Latter Tandy, A. G. R. Foulerton, H. D. Lauchlan, G. H. Forman, J. E. Sandilands, C. A. Parker, A. A. Bowlby, F. W. Clark, W. T. Partridge, J. Pickett, and R. J. Reece.

"The first act of the new lodge was to enroll its first honorary member in the person of the Prince of Wales. The benediction having been pronounced, their Royal Highnesses took their departure, and on leaving the hospital received an ovation from the students gathered in the quadrangle. The guard of honor was furnished by the St. Bartholomew's Hospital Company of the Volunteer Medical Staff Corps. The brethren afterward adjourned to a banquet at the Albion, Aldersgate Street, the toast of 'The Visitors' being responded to by General Smith, of Illinois.

"We wish this new professional lodge every success; it has received a magnificent christening, and the number of joining members is already very large."

Researches on the Membrane of Corti.—Coyne and Cannieu (*Ann. des mal. de l'oreille et du larynx*, May, 1895) draw the following conclusions from their investigations: The membrane of Corti possesses two fixed insertions: one on the protuberance of Huschke, and the other on the organ of Corti itself and on the cells of Claudius. The membrane of Corti is formed by a large number of polygonal cavities or clefts. These cavities are largest nearest the organ of Corti and smallest when nearest the superior limiting layer. In the interior of these cavities are found the vibratile cilia of the sensory cells of Corti. In sections of the tectoria, the fibrils correspond to the lines of union of the cavities, and the transparent substance which unites them corresponds to the cavities themselves.

Libel Suits Won by Physicians.—Dr. A. E. Davis, of whose successful suit against the *Sun* we made mention some months ago, informs us that he and Dr. B. F. Parrish have each been awarded damages in $25,000 on suits against the *National Police Gazette* for libel.

The Library of the Surgeon General's Office.—According to the *Tribune*, the library now includes about 112,000 bound volumes and about 150,000 pamphlets.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 29 to July 13, 1895:*

EWING, CHARLES B., Captain and Assistant Surgeon, is granted leave of absence for two months.

GANDY, CHARLES M., Captain and Assistant Surgeon, is granted leave of absence for two months, to take effect upon his relief from duty at Fort Yellowstone, Wyoming.

HUNTINGTON, DAVID L., Lieutenant Colonel and Deputy Surgeon General, is granted leave of absence for one month upon his relief from duty in the Department of the Colorado.

MCCULLOCH, CHAMPE C., First Lieutenant and Assistant Surgeon, is granted leave of absence for one month, to take effect about July 1st.

REYNOLDS, FREDERICK P., First Lieutenant and Assistant Surgeon, now at Fort Sam Houston, will proceed to Fort Bliss, Texas, not later than July 1st and report for temporary duty during the absence on leave of TAYLOR, BLAIR D., Major and Surgeon.

TAYLOR, BLAIR D., Major and Surgeon, is granted leave of absence for one month, to take effect between July 1st and 10th, with permission to apply for an extension of ten days.

GRAY, WILLIAM W., Captain and Assistant Surgeon, is granted leave of absence for two months, to take effect on or about August 1, 1895.

MIDDLETON, JOHNSON V. D., Lieutenant Colonel and Deputy Surgeon General, is granted leave of absence for one month, to take effect on or about the 23d inst.

ROBERTSON, REUBEN L., Captain and Assistant Surgeon, resigned July 3, 1895.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending July 13, 1895:*

CRANDALL, R. P., Passed Assistant Surgeon. Detached from the U. S. Receiving-ship Vermont and ordered to the New York Navy Yard.

Percy, H. T., Passed Assistant Surgeon. Detached from the Naval Hospital, Washington, and ordered to the Navy Yard, Washington, D. C.

Pickrell, George Mc., Passed Assistant Surgeon. Ordered to the Naval Hospital, Washington, D. C.

Society Meetings for the Coming Week:

Monday, *July 22d:* Boston Society for Medical Improvement.

Tuesday, *July 23d:* Medical Society of the County of Putnam, N. Y. (annual).

Wednesday, *July 24th:* American Ophthalmological Society (New London, Conn.); American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.

Thursday, *July 25th:* New York Orthopædic Society; Pathological Society of Philadelphia.

Friday, *July 26th:* Cleveland, O., Medical Society.

Births, Marriages, and Deaths.

Married.

Johnston—Hurley.—In Bradford, Pa., on Wednesday, June 19th, Dr. James Johnston and Miss Mary Frances Hurley.

Died.

Fields.—In Plainfield, N. J., on Friday, July 12th, Dr. C. M. Fields, aged forty-five years.

Nelson.—In Truxton, N. Y., on Thursday, July 11th, Dr. Judson C. Nelson.

Thompson.—In Boston, on Saturday, July 13th, Dr. George W. Thompson, aged eighty-two years.

Letters to the Editor.

RECUMBENCY IN LYING-IN WOMEN.

New York, *July 11, 1895.*

To the Editor of the New York Medical Journal:

Sir: In your issue for July 6th I noticed an article by Dr. T. Ridgway Barker, of Philadelphia, entitled How Long shall the Puerperant Maintain the Recumbent Posture?

A number of years ago this question was settled in the obstetrical clinic of Halle, Germany. Five hundred women, after *normal* confinement, were allowed to rise as soon as they pleased and remain up out of bed as long as they felt like it—*i. e.*, as long as they felt comfortable. Some of these women left the bed for a shorter or longer time as early as the second day post partum. No ill consequences could be observed in any of these five hundred cases. Five hundred other women, under similar circumstances, were kept in the recumbent posture, or in bed, according to the time-honored custom, for a week or the well-known superstitious nine days. The result was strikingly in favor of the five hundred early risers.

I can not name the periodical in which these observations were recorded, but some of the readers of the *New York Medical Journal* may be able to do so and give the interesting details.

An old practitioner some time ago gave from his rich experience a number of highly practical aphorisms which he published in the *Medical Record.* Among other things, he recommended earnestly that we should induce the woman to rise—to leave the bed—for the first micturition after childbirth. Micturition thus performed in the natural position, out of bed, is, as a rule, accompanied by the expulsion of some clots of blood from the uterine cavity where they had been retained while the woman remained in the recumbent posture. This discharge of clots of blood, as a matter of course, must be of most salutary effect. The rising so soon after parturition, bringing about evacuation of the uterine cavity, may do as well as massage of the uterus. The experience at the Halle clinic and that of the old practitioner above mentioned appear to show that, except in cases of special contraindications, the parturient may rather be benefited by rising earlier than has been customary.

A. Rose, M. D.

CLEIDOTOMY.

London, England, *July 3, 1895.*

To the Editor of the New York Medical Journal:

Sir: In your issue of June 22d you publish a short note of a paper by Professor Phänomenoff, of Kasan, which appeared in the *Centralblatt für Gynäkologie* of June 1st, upon cleidotomy, or the division of the clavicles of the fœtus in certain cases of obstructed labor. As Professor Phänomenoff makes no mention of the fact, I should be obliged if you would allow me to state in your columns that this aid to embryotomy was previously advocated by me in the *British Medical Journal* of April 13th in a paper on Delivery in Certain Cases of Obstruction by the Trunk of the Fœtus. I have taught this useful little manœuvre at University College for the last seven years, the first instance in which I practised it occurring in the year 1888 in a case of obstructed labor to which I was called by my friend and late assistant, Dr. Walter Tate. The little operation is easily performed under the guidance of the fingers with a pair of rather long dressing scissors. Herbert R. Spencer.

Proceedings of Societies.

PHILADELPHIA ACADEMY OF SURGERY.

Meeting of June 3, 1895.

The President, Dr. Thomas G. Morton, in the Chair.

A Divided Spring for Heavy Bone-cutting Forceps.—Dr. A. Hewson exhibited a forceps which had been used in several laminectomies with great success. In the four laminectomies in which this instrument had been used, he said, the ease with which the spinous processes and the laminæ had been cut was remarkable. The forceps was of the general style of the rib-forceps, and, in addition to the purpose already mentioned, it was useful for cutting off plaster bandages. The blades were set at an obtuse angle to the handles so as to facilitate cutting the laminæ. The upper cutting blade was serrated like the teeth of a saw. The lower, which was also a cutting blade, had at its extremity a horizontal projection, similar to that on the bandage shears, which was to be inserted beneath the laminæ and served to keep the blade in position while cutting the bone. The handles were much longer, to give greater leverage. The new point to which the speaker directed attention was the divided spring. All the other instruments of this kind were provided with a single spring, which kept the blades apart. In this instrument the spring was divided so that it could be turned back when not in use, and when extended we got the full power of the spring to open the blades. He had found this a very useful appliance, and had used it both on the living and on the dead body. It greatly facilitated opening the spinal column for removing the cord, and for this purpose was much better than the spinal saw.

A Portable Ligature-tube Holder.—Dr. Hewson showed this device also. It resembled a gigantic test-tube holder, made of sheet iron, painted white. It consisted of two uprights and three shelves. The uprights were $9\frac{1}{4} \times 4\frac{5}{16}$ inches, having three hollow blocks, $2\frac{1}{8} \times \frac{3}{8} \times \frac{3}{8}$, placed on the inside at the base two inches and a quarter and eight inches and a quarter therefrom, leaving an inch above the top shelf. The three shelves were $13\frac{3}{16} \times 14\frac{5}{16}$ inches. The first, or upper shelf, had five holes for the ligature tube, an inch and a half in diameter. The second, or middle shelf, had the same number of holes, an inch and a quarter in diameter. The third, or bottom, was without holes. The difference in diameter of these holes added equilibrium to the tubes when in place. On the lower surface of each shelf at their extremities was a block, with a projection which fitted into the hollow block of the uprights. These blocks were opposite to those on the uprights, so that the projections might be pushed in when the holder was ready for use. The space occupied by the whole when apart was $13\frac{3}{16} \times 4\frac{4}{16} \times 1\frac{1}{2}$ inches, and weighed in its present crude form eight pounds. When it was in use the corks of the tubes were removed and placed in a proper antiseptic solution and the orifice of each tube was covered with bichloride gauze. The assistant removed the ligature as required with a forceps, so that it was fresh from the solution without handling. This mode of procedure had been in operation at the Jefferson College Hospital for two years past and had given great satisfaction. The original idea of this mode of handling ligatures had been brought about by having each ligature in a separate tube, but this had been found to be a cause of infection, as it had been impossible to insure the aseptic condition of a fine glass tube for each ligature, as well as consuming too much time in the preparation of such tubes.

A Set of Anatomical Instruments.—Dr. Hewson presented the set, which, he said, was of interest from a historical point of view, as it contained a syringe for fine injection of lymphatic vessels, used by his ancestor, William Hewson, F. R. S., in 1768, in his preparations. The brass syringe was in a perfect state of preservation, with four gold-pointed nozzles. He had used it in preparing fine injections of the lymphatics. The large brass syringe had been used by his father in his preparations during his student days, and by means of it, with the various attachments, he had prepared subjects for fine dissection. The sternum dilator gave the greatest width possible for aortic injection (six by eight inches). In making tallow and soap injections he had found that veins injected from the heart would hold a quarter more material than the arteries injected by the aorta, and still some of the cutaneous veins of the extremities would not be filled, owing to their finer valves. In introducing the preservative fluid Dr. Hewson used altogether the hydrostatic method, the subjects taking from three to five gallons of fluid. The saw was the ordinary fine carpenter's pattern, with an upright handle about three inches from its extremity on the upper margin. The cutting edge had been lunated anteriorly, while the posterior or handle extremity was at right angles. This was a modification of Forbes's saw, the cutting edge of which was lunated. The object attained by the modification was that it enabled it to be used in either sawing the cranial bones or the laminæ, which was not the case with the entire lunated margin. The forceps just described was superior to the saw for the laminæ, giving greater space and more rapidity of action, besides avoiding all risk of injury to the spinal nerves. The case contained, in addition, spaces for two balls of twine (large and small), Hey's saw, an enterotome, a brain knife, a blowpipe, a hammer, a chisel, a large incision knife, a student's dissection case with its accompaniments, and stopcock pipes of various sizes for immediate introduction into the vessels.

Fractures of the Skull.—A paper on this subject was read by Dr. Charles W. Dulles, who called attention to some points in regard to fractures of the skull which, he believed, did not receive in this country, or anywhere, except in Germany and Russia, the attention which they deserved. He referred to the mechanism of indirect fractures. This had much more than a purely scientific interest; it might be an important factor in our application of the art of surgery as well. Eight years ago he had read before the College of Physicians a paper, to the preparation of which he had devoted a great deal of time and labor, and in which he had expounded the theory known as the "bursting theory" of indirect fractures. This paper had—so far as he knew—never been noticed in any way on this side of the Atlantic. He referred to it in order to make it the authority for certain statements made here, which were there supported by argument and demonstrations.

The bursting theory of indirect fractures of the skull, he said, might be invoked to clear up many difficulties of diagnosis in fractures of the skull, and he believed that it should invariably be invoked before conclusions of a medico-legal character were reached.

He had seen more than one case under the care of the coroner of Philadelphia in which he had found a fracture precisely where he had thought it should be, even after the coroner's physician had examined the skull and concluded that there had been no fracture at all. He had also seen cases in the living in which the application of the "bursting theory" had furnished very instructive suggestions in regard to the diagnosis of accidents to the skull, making them much clearer and the treatment much more satisfactory. An appreciation of the bursting theory also often cleared up the perplexities of cases in which, without detectable fracture of the skull, there was found a rupture of blood-vessels and hæmorrhage within the cavity of the skull, either extradural or intradural.

Briefly stated, the bursting theory might be outlined as follows: The skull was a hollow case, of a somewhat ellipsoid form, the wall of which was formed of bone, varying in thickness and density in different parts, and of a peculiar conformation, and with peculiar contents and coverings. When such a case was struck, or when it struck upon a resisting body, it was compressed in a direction in the line of the force and counter-pressure (which latter might depend wholly on *vis inertiæ*). The result of this compression was to shorten the prime diameter, and of necessity to lengthen the transverse diameters. As illustrating this first phase of action, said Dr. Dulles, Sir Charles Bell, in the early part of this century, had made an experiment (which was easy to repeat), in which he had placed movable balls inside and outside of a hoop and touching it, and had found that a blow upon any part of the hoop caused the ball immediately under it and that immediately opposite it to move toward the centre of the hoop, while those distant ninety degrees from it moved away from the hoop. If this experiment were to be modified so as to meet the conditions of a hollow sphere instead of a circle, we might place half of a hollow sphere upon a resisting surface, and striking it on the upper pole would find that this pole would approach the resisting surface and the circumference would be elongated and describe a larger circle. In such an experiment, made upon an elastic substance, the compression and elongation would be followed by a corresponding expansion and shortening. The first compression and elongation spoken of were of the chief importance in indirect fractures of the skull, and in them we had (to use a simple illustration) conditions similar to those when an umbrella was raised. In the latter case it was plainly seen what took place—namely, that, as the pole was brought nearer to the equator, this was elongated and the space between the meridians (the ribs of the umbrella) was increased. This increase having been expected, and provided for by material which lay in folds between the meridians, it was simply spread out. In a body with no such provision, however, any force that would bring its poles near together, and consequently lengthen its equatorial circumference and separate its meridians, would at once set up a struggle between the force applied and the cohesion of the particles lying along and between the meridians. If the power of cohesion was sufficient, there would be no disruption; if, however, it was not, then there would be a split beginning at some point near the equator, where the strain was most severe, and passing in opposite directions toward the poles. This was what would take place in a perfectly symmetrical homogeneous elastic body. What naturally took place in the skull was shown by observation and experiment to be this, modified by the peculiar structure, formation, contents, and surroundings of the skull.

This was what was known as the "bursting theory," and its bearing upon practice would be appreciated, the speaker thought, by those who applied it. It provided the surgeon—not with certainty of diagnosis, but with suggestions of probability which would increase his chances of making a reliable diagnosis. The inferences from it, which were of a practical nature, were as follows: Force applied to the skull, of sufficient violence and rapidity of action, would produce what was known as a direct fracture—fracture at a point where the violence had been applied. In these cases the rapidity of action was a very important element, as it was a well-known fact in physics that time enabled cohesion to resist a disruptive violence which, if instantaneously applied, would at once overcome cohesion. Force less sudden and less extreme applied to the skull would bring actively into play the elastic properties of the skull, and if violent enough would lead to a fissure at some distance from the point at which the violence had been applied, and usually in a line meridional to the point where the force had been applied. Dr. Dulles said that his study of a large number of accidental and experimental fissures indicated that blows upon the forehead directly in the middle line were likely to produce a fissure of the skull, passing from front to back in or near the middle line, and more frequently at the base of the skull than in the vault. Blows applied to the forehead on one side or the other were likely to produce fissures in a line with the direction of the force, and crossing the skull to the other side. Such fissures occurred almost always in the base, and they usually terminated in the middle cerebral fossa, though they sometimes crossed the foramen magnum and traversed the cerebellar and posterior cerebral fossæ. Force applied to the middle of the occiput usually produced a fissure, passing in the direction of the force around the occiput, laterally or perpendicularly, sometimes separating the lambdoid suture, sometimes splitting the lower part of the occipital bone and going into the foramen magnum, and sometimes crossing the petrous bone, breaking it transversely and passing into the foramen lacerum medius. Such fissures might pass straight down to the foramen magnum and (crossing over) split the body of the sphenoid bone and extend into the ethmoid or frontal bone. (Such fissures furnished typical illustrations of the correctness of the bursting theory.) Force applied to the side of the head, in almost all cases, produced a fissure passing through the base of the skull in the middle cerebral fossa. Such a fissure sometimes traversed this fossa completely and might pass completely through the base and vault, dividing the skull into two halves. In some cases the fissure passed directly through the coronal suture; in many cases it split the petrous bone longitudinally. In some cases force applied to the side of the head caused a splitting off of the posterior clinoid processes—an occurrence that was explicable only upon the supposition that the tentorium cerebelli, which was attached here and to the occipital bone, was put upon the stretch when the skull was elongated antero-posteriorly and dragged these portions from the body of the sphenoid. Force applied to the side of the head frequently produced fissures passing around the side of the head, through the parietal and squamous bones, and often passing to the basisphenoid, but rarely dividing it completely. In some cases force applied directly to the vertex produced a fissure in the long axis of the skull. Such a fissure might be of very great extent and might even divide a skull into two symmetrical halves. Longitudinal (antero-posterior) fissures occurred more frequently in the base of the skull than in the vault.

An interesting form of violence, applied to the skull, was that due to falls upon the feet, where the momentum of the body was suddenly arrested by the resistance of the earth. In such a case a ring of bone surrounding the condyles might be driven into the skull, or—as observation and experiment showed—the process of the sphenoid bearing the posterior clinoid processes might be broken off by the pull of the tentorium cerebelli, when momentum and resistance lessened the diameter from condyles to vertex and lengthened the diameter from occiput to sinciput.

Dr. Dulles said that he stated his views in reference to this matter somewhat authoritatively, because he had studied it pretty thoroughly for ten years, and because these views agreed, he thought, with those of the most careful students of the subject in recent years. They had also been confirmed by a considerable number of personal observations. They had an important bearing upon surgical practice and also upon medicolegal questions. For example, in 1886 he had seen a coroner's case of a person who had fallen down some stairs, striking the head near the external occipital protuberance, in which, after the skull had been opened and the brain removed, no fracture had been found by the coroner's physician, and none would have been found had he not been asked to remove the dura and to look along a line suggested by an application of the bursting theory, where a fissure had been found passing down through the occipital bone and into the jugular foramen.

Dr. Dulles's investigations showed, in over ninety per cent. of all cases, fissures that corresponded to what might be expected from an application of the principles of the "bursting theory." This result, he said, seemed to establish the theory by the best test that we could apply to it, so that it appeared to rest upon a very firm tripod of reasoning, experiment, and clinical observation.

He did not overlook the fact that there were fractures that could not be accounted for by it. There were some fractures in which the force applied was so great and acted in such a manner that the skull was crushed so as to hide any evidence of the play of its elastic properties, the fracture being of a comminuted sort; and there were others in which one segment of the skull seemed to be shoved over the other by forces of pressure and counter-pressure which required some study before their mode of operation could be understood. For this reason it was of importance to learn in every case the position which the skull had held in relation to the spinal column or to any body capable of exerting counter-pressure. No less was it important not to overlook the counter-pressure that was caused by the simple *vis inertiæ* of the skull and its contents.

It would be impossible, said Dr. Dulles, to speak of all the influences that might modify the strict application of any one theory in regard to fractures of the skull; his own conviction was that the supreme law governing the production of indirect fractures was that which depended upon the fact that the skull was practically a hollow elastic case approximately oval in shape, and which might be briefly formulated as follows: When a sufficient force was applied to any curvilinear part of the skull, if this part did not give way immediately, the axis of the skull lying in the same line as that of the applied force was shortened, and all the axes lying in planes at right angles to this line were correspondingly lengthened, with a proportional lengthening of their circumferences and separation of their meridians, so that the direct depressing force was converted into an indirect disruptive force acting at right angles to the direction of the former. The effect was to produce a fissure or fissures, which would have a general meridional direction.

The application of this law was subject to certain modifications due to the anatomical and architectonic peculiarities of the skull, its coverings and contents, and to certain exceptions due to the amount and velocity of the force applied, as well as to the coming into play of peculiar counter-forces.

The President asked if the alteration in the conformation of the skull—that was, the shortening of the axis in the direction of the applied force and the lengthening of the transverse axes—had been accurately determined by measurement.

Dr. Dulles replied that the alteration had been carefully measured and that there was an appreciable difference, the amount of which was mentioned in his former paper.

Dr. Hewson desired to know, in regard to fractures of the clinoid processes, if the fact of the difference in the height of the free concave margin and anterior attached extremities to the posterior clinoid processes had been taken into consideration. Owing to this, the portion of the tentorium open for the passage of the nervous substance was triangular, with curved sides, and this was much higher than its attached anterior extremities to the posterior clinoid processes. The direction of the free margin of the tentorium was pointed upward over the superior vermiform process of the cerebellum, this margin being higher than its anterior attachment. He wished to know if the direction of the traction upon the posterior clinoid processes contributed anything to the fracture; also if any laceration of the margins of this opening had been observed.

Dr. Dulles said that whether or not the posterior clinoid processes were higher that the arch of the tentorium depended much on the way in which the skull was held. He thought that under ordinary circumstances, when the head was held erect, they were about on the same level.

Dr. Hewson remarked that the tentorium arched upward.

Dr. Dulles replied that he had not overlooked this fact in his study of fractures of the skull. Under ordinary circumstances the curve of the tentorium would supply an amount of slack material which would prevent any pull on the clinoid processes. But it must be remembered that the tentorium rested upon the cerebellum and was held tense above the cerebellum, and was so attached that the latter occupied a closed, unyielding case. The brain substance was so largely made up of water that it was almost as incompressible as water, and the cerebellum would hold up the tentorium almost as effectually as if it were made of marble, and so cause a pull at its posterior part to be transmitted to its anterior attachments. This was, said Dr. Dulles, only by way of a suggested explanation of fractures of the clinoid processes; he had no demonstration of the theory to offer.

OREGON STATE MEDICAL SOCIETY.

Twenty-second Annual Meeting, held in Portland on Tuesday and Wednesday, June 11 and 12, 1895.

The President, Dr. J. A. Fulton, of Astoria, in the Chair.

Heredity.—Dr. C. H. Hall, of Salem, read a paper with this title. It was his opinion that mutilations of the body could not be transmitted, whether acquired or congenital. The hypothesis that acquired characters could be transmitted was only indirectly supported by individual instances, as there were no observations reported which had proved the transmission of functional hypertrophy or atrophy. It could hardly be doubted that mutilations were acquired characters; they did not arise from any tendency contained in the germ, but were merely the reaction of the body under external influences, purely somatogenic characters. Among other examples to illustrate the point of non-transmission of mutilations, the speaker used that of circumcision, which had been practised so many centuries, and in all that time no child had been born with an abbreviated prepuce. If visible mutilations were present and transmission was not traceable, why might it not be concluded that pathological conditions were not hereditary? Children might be born with a cachexia which would render them susceptible to scrofula or phthisis, but no child was born with the disease of its parents or inherited the mutilations of its ancestors. If heredity was a law, it would certainly affect everything alike which was produced or begotten under the influence or impetus of like conditions, and not be an exception, as it was, in transmission. Heredity appeared to be capricious, because its depths could not be penetrated. It would be impossible to predict whether any characteristics of the parent would reappear in the child. Characters were made and not born, and physical conformation was the result of culture or the lack of it. All organic life existed either in a physiological or in a pathological state. Pathological functions were incapable of physiological action. Mutilation of the body could not participate in the physiological act of reproduction. The physiological ovum was fertilized by the somatogenic cell, and whatever mutilation occurred afterward must be the result of environment.

Dr. Ernest F. Tucker, of Portland, and others who discussed the paper, could not agree with Dr. Hall. The law of heredity was too well understood and recognized to require fur ther proof in substantiation of facts, such as the inheritance of syphilis and the influence of heredity in the neuroses and mental diseases.

Transverse Presentation with Placenta Prævia.—Dr. Richmond Kelly, of Portland, reported an obstetrical case which presented some unusual features. The patient, aged twenty-eight years, was a fairly developed but poorly nourished woman, who had had a premature delivery of twins some time before, with a protracted convalescence and then an abortion at the close of the second month of gestation, with retained membranes and profuse and protracted hæmorrhage. So profuse had been the loss of blood that the patient had never regained her normal color. There was also a depressed mental state.

The abortion occurred in the spring of 1894 and the patient ceased menstruating in September. The first half of the pregnancy was attended with unusual disturbance of the digestive system, with marked dyspnœa on exertion, the latter being due to irregular action of the heart and a watery state of the blood. During the sixth month she had observed some blood in the excessive leucorrhœal discharge from which she was suffering at the time. The color continued to show at times for a month, when at one time she lost several ounces of partly fluid and partly clotted blood. Thereafter the color was never absent. On April 13, 1895, the pain was sufficient to lead her to call a physician. The general condition of the patient was found bad; the surface was pallid, the subcutaneous tissues were inclined to puffiness, the appetite was poor, the bowels were irregular, and there was considerable mental depression. The heart was slightly dilated and irregular in rhythm. Uranalysis was negative. The abdominal tumor was unusually prominent, particularly in its transverse measurement, and the parietes were very sensitive to the touch. Digital examination revealed a dorso-anterior transverse presentation, the head directed to the left. The left lower cervical zone was occupied by the placenta, which extended to the os internum and rendered efforts at cephalic version futile. The hæmorrhage had at no time been alarming, and the expectant plan of treatment was carried out, with instructions as to the avoidance of active exercise. Shortly after midnight of April 30th the membranes ruptured after there had been considerable pain of a lancinating character through the abdomen and thighs. On May 1st the condition was about the same. Efforts at correction of the malpresentation by cephalic version were again made without practical results on account of the presence of the placenta, the extreme sensitiveness of the abdominal walls, and retraction of the uterus about the child. Toward evening of the same day there was still no dilatation of the os, and there were no uterine contractions, but the woman's condition was about the same; the fœtal heart, however, had become distinctly less vigorous and its beats had increased in frequency from 140 to 180. After thorough preparation the patient was anæsthetized, the hand was passed through the cervix, a foot was grasped, and the child was extracted partially asphyxiated, but its resuscitation was speedily successful. The uterus did not contract readily or vigorously, and was held by suprapubic pressure until a drachm of fluid extract of ergot had produced some effect. The presence of a small pulsatile stream of blood flowing from the vagina prompted a digital examination, when a laceration of the cervix up through the vaginal junction was discovered. Every appliance that was at hand was used to arrest the hæmorrhage, such as tampons crowded into the uterus, cervical canal, vagina, etc. Notwithstanding these efforts, the patient gradually lost ground and died three hours later. With skilled assistance sutures might have been passed through the vaginal vault so as to include the divided tissues, but it was not at hand. In cleansing the child, which was a well-developed girl of six and a half pounds' weight, the nurse discovered a laceration of its perinæum extending from the fourchette to the anterior anal margin in the median line, measuring an inch in length and three eighths of an inch in its greatest depth. There was no satisfactory hypothesis to account for the laceration, as traction had not been extreme and not made in an unfavorable direction.

Dr. S. E. Josephi, of Portland, commended the reporting of such a case by Dr. Kelly. To attain the highest standard of knowledge in medicine and surgery, it was obvious, was our object, and if only favorable cases were reported this could not be reached. It was the duty of every physician and surgeon to report the bad cases as well as the good ones, for the bad case, while unfortunate for the patient, was a good lesson for the profession.

He did not see what else under the circumstances Dr. Kelly could have done, unless he had used saline injections and bimanual pressure instead of simply suprapubic compression. Of course the remedy lay primarily in a change in the position of the child, and this could not be done.

Dr. A. J. Giesy, of Portland, said that there was no doubt that the parts must have been in a very abnormal condition to tear so easily. It was his practice in cases of hæmorrhage to remove the placenta as quickly as possible and bring about reaction of the uterus by stimulation.

Dr. Kelly said that there was contraction of the uterus at first, but when the function of the cord was interfered with, it became relaxed and would not respond to stimulation again. The giving of saline injections had been thought of, but there was no intelligent assistant to give them. In view of everything, he did not think that Cæsarean section would have offered greater dangers than the operation which was done. He would have liked to hear from some of the members their opinions in regard to the laceration of the child's perinæum.

Retrodisplacements of the Uterus; their Treatment by a New Method.—Dr. Ernest F. Tucker, of Portland, described a procedure which he had been perfecting for the correction of retrodisplacements due to adhesions. Generally speaking, the most prominent factor in the causation of displacements was chronic metritis or subinvolution following a laceration of the cervix, and indirectly sometimes the result of a rupture of the pelvic floor. Prolapse and retrodisplacements were, in the consideration of the treatment of these two conditions, almost inseparable, and that which applied to the treatment of one applied equally to the treatment of the other. In fact, the speaker believed that it was rather the prolapse than the retrodisplacement that gave rise to most of the symptoms. In an examination of the blood supply of the uterus, we found that the blood-vessels which supplied the fundus, the freely movable portion of the uterus, were very tortuous in their entire course through the upper border of the broad ligaments, thereby admitting of considerable stretching and even twisting of these ligaments without bringing about any interference with the circulation. On the other hand, those that supplied the uterus at the vaginal junction, the fixed portion of the uterus, were short and straight, so that when this part of the uterus was depressed or raised beyond its normal level in the pelvis, the circulation was at once interfered with and chronic congestion was the result. This was illustrated clinically in that the more the uterus was prolapsed the greater was the increase in the size of the organ; if, however, such a uterus was artificially raised and maintained at its normal level, its size would rapidly diminish, although this result would not be permanent unless the conditions that caused the displacement were remedied. Again, we often saw adherent retroverted uteri that seemed to cause absolutely no symptoms of discomfort, probably owing to the fact that the adhesions had occurred before the uterus had had time to prolapse to any great extent, and consequently the cervix had been kept at very nearly its normal level in the pelvis. Where there were no adhesions the uterus could be replaced and maintained in its normal position by appropriate local treatment followed by the necessary plastic operations on the cervix and vaginal walls. When we came to deal with a uterus bound down with adhesions, we found exactly the same condition of affairs plus the adhesions, and if these could be got rid of, the same treatment would be curative as applied to the earlier conditions. No operation was applicable to these cases that had not for its object the breaking up of these adhesions. After describing the various methods of other operators for this purpose, the speaker gave the detailed steps of his procedure. After all the good that could be accomplished by local treatment had been obtained, such as by curing any endometritis, cellulitis, or pelvic peritonitis, or any inflammatory condition of the appendages that could be cured without their removal, the patient was prepared for the operation as carefully as if she were to undergo vaginal hysterectomy. After being anæsthetized, she was placed on her back and an opening made into the peritoneal cavity through the posterior vaginal vault. The finger was then introduced and the adhesions between the uterus and rectum were broken up; when these were separated the uterus could be readily pushed forward .If there were any bleeding points, these could be readily ligated, and at the same time the condition of the appendages could easily be made out and, if necessary, any adhesion binding down these organs could be torn away and the ovaries and tubes freed. The opening into the peritoneal cavity was then closed and the cervix operated on if necessary; after this a tampon of iodoform gauze was placed in the vagina to hold the uterus in position and the operation was completed. The patient was then placed in bed and made to lie on her side as much as possible, to aid in maintaining the uterus in position, although this rule had not been adhered to in the second of the speaker's cases, the uterus maintaining its position perfectly up to the present writing. At a later date, as soon as convenient, the perinæum should be restored. The bowels should be kept loose, to prevent straining. The length of time that the supporting tampon should be left in the vagina after the operation would vary with the condition of the uterus and must remain greatly a question of judgment with the operator. In most cases a few days would be all that was necessary. In performing laparotomy for the removal of diseased appendages, where retrodisplacement with adhesions was present, the result was not permanent because the removal of the appendages defeated the object in view, so far as the position of the uterus was concerned, on account of the contracture of the broad ligaments which followed the removal of the ovaries and tubes and would have a tendency to displace the uterus anew. After removal of the ovaries and tubes the uterus had to depend for its blood supply on the uterine arteries alone, the circulation in which was much more readily interfered with than that in the ovarian arteries, a fact which made displacements in such patients much more difficult to treat.

The speaker's cases had so far been successful, and he did not see any theoretical reason why they should not continue so, or why the operation should not prove of value. The procedure had certain advantages over other operations from its extreme simplicity, and again from its removing all pathological conditions without substituting any new ones.

Dr. Giesy had found that unless adhesions were broken up the simple repairing of lacerations did not cure displacements. He agreed that if a cure was to be attained, the cause must be removed. He should follow Dr. Tucker's work with considerable interest, and would like to hear of his later results.

Dr. Josephi would like to know how Dr. Tucker expected to keep the adhering surfaces from readhering. It had seemed to him that there would be a tendency, after the breaking up of the adhesions, where the raw surfaces were left, for them to adhere again.

Dr. J. A. Fulton, of Astoria, had been doing Alexander's operation for the correction of certain displacements, but was about to abandon it because the results had not been good enough. It appeared to him that the operation suggested by Dr. Tucker offered several advantages. The vaginal route was being adopted by many, and it certainly was a step in the right direction.

Dr. H. R. Holmes, of Portland, did not indorse the operation as brought forward by the writer of the paper, or the view that it had advantages over ventral fixation. He had just returned from a meeting of the American Gynæcological Society, at Baltimore, where he had heard the merits of ventral fixation discussed very favorably. He did not think that the operation proposed by Dr. Tucker offered any advantage over other known methods.

Dr. Tucker said that there was no danger of the surfaces becoming attached again, as such adherence only occurred between diseased parts. The operation was never to be done while there was any peritonitis present. When the adhesions had been broken up and the uterus put in position, the separated tissues were not apposed, so that on that ground no readhesion could take place. The speaker had done the operation but a few times, but the results had been so good that he was going to give it a further trial to find out its virtues. Alexander's operation had always seemed to him to be a subterfuge, substituting one abnormal condition for another.

(*To be continued.*)

Book Notices.

Ectopic Pregnancy. Its Ætiology, Classification, Embryology, Diagnosis, and Treatment. By J. Clarence Webster, B. A., M. D., F. R. C. P. Edin., Assistant to the Professor of Midwifery and Diseases of Women and Children in the University of Edinburgh. With Eighty Illustrations of Naked-eye and Microscopic Appearances. New York: Macmillan & Co., 1895. Pp. xiii–240.

This may be considered one of the most important and authoritative works upon a profoundly interesting and important subject. Previous works upon the subject have dealt mainly or exclusively with clinical facts and observations. We are not denying the essential character and value of such observations, but they left us in the dark as to the principles upon which the facts rested. The author of this book has given us very few clinical facts. He has summarized in his chapters on history, diagnosis, and treatment the work which his predecessors in the field have done, but he has also given us the admirable results of his anatomical investigations, which go a step further—several steps further—than any other book upon the subject with which we are familiar. The author's pathological study has been carried on largely by means of frozen sections. It will readily be seen that this must be the only correct method of obtaining exact knowledge of the relations which obtain between the fœtus and its surroundings, especially in advanced periods of pregnancy. With the development and perfection of this method of study the Edinburgh school of investigators is pre-eminently to be credited.

In his opening chapter, upon ætiology, the author does not hesitate to acknowledge the debt of obligation which Tait's labors in the field of ectopic gestation have imposed upon the world; no fair-minded person could do otherwise, whatever his prejudices might or might not be. At the same time he is able to explode more or less that Tait has placed before the world as fact which in the light of pathological investigation has proved to be only theory and dogma.

For example, he shows that impregnation may begin normally in the tube or in the uterus, and does not invariably begin in the uterus. Tait's equally positive assertion that the placenta may grow after the death of the fœtus (though this is not in the chapter on ætiology) is explained by the admission that the placenta may become larger by the extravasation of blood, but "there is no reason why they [the villi] should continue to grow after the fœtus, which is the sole reason of their existence, has ceased to live."

He does not discuss, however, in this connection the possibility that the placenta may retain its vitality through an adventitious circulation by means of organized adhesions, though even if this were the case it would be unlikely to result in material increase of size, the main source of nutrition and vitality being cut off.

Previous classifications of causes of ectopic gestation are shown to be faulty, too much stress having been laid upon some of those which are accidental rather than essential. Thus, desquamative salpingitis has often been regarded as having an ætiological significance, whereas it is now known that the lining epithelium of the mucosa, both in tubal and in uterine gestation, plays an entirely negative part with regard to the development of the ovum.

Seven reasons are given for disagreeing with Tait as to the influence which menstruation exerts in preparing the way for conception. The author's remarks concerning the presence of the decidua in tubal pregnancy are extremely interesting and important, but at times rather vague, especially those about "decidual reaction" and "genetic reaction." What these terms signify is left to conjecture. We do not feel satisfied that he has proved the possibility of external migration of the ovum and conception in a tube opposite to the ovary from which the ovum was liberated. Unexplained also is that condition in which pregnancy has been found in a rudimentary uterine horn with an apparently solid band of tissue between the gestation sac and the uterine cavity, while a fresh Graafian follicle was found in the ovary on the opposite side of the body.

His demonstration in regard to the essential presence of decidual tissue in a tube in which gestation is suspected is forcible and satisfactory. The presence of decidual cells is of course the key to such a diagnosis. Conception in or upon any tissue not derived from the Müllerian ducts is considered impossible. This excludes primary abdominal pregnancy, but not ovarian. The latter, however, has not yet been satisfactorily demonstrated, most of the supposed cases having a manifest tubal origin.

The chapter devoted to the history of ectopic gestation is concise and satisfactory, and is divided into the period prior to Dezeimeris (before 1837), the period between Dezeimeris and Tait (1837 to 1873–1889), and the present period. By the latter he doubtless has reference to his own classification, which may be briefly described as follows:

All cases are primarily tubal, and may be subdivided into—

1. Ampullar, which may be persistent, or may rupture into the broad ligament, or into the peritoneal cavity, or the gestation may be destroyed in any one of five ways.

2. Interstitial, which may continue to term, or may result in rupture into the peritoneal cavity, the uterine cavity, both the uterine and peritoneal cavities, or between the layers of the broad ligament, or after the death of the fœtus may undergo mummification or adipocere or lithopædion formation.

3. Infundibular, with tubo-ovarian and tubo-abdominal varieties.

All these varieties are then studied in detail, and we are aware of nothing which has been published in which there is such a clear and complete statement of the anatomical conditions and relations.

The fact that ectopic fœtuses which go to term are usually defective physically in some way has been noted by various writers. The author accounts for it by abnormal pressure relations. Of those that have been born alive one could almost reckon on the fingers of one hand those that have survived infancy. This fact must receive its due weight when the lives of mother and child are balanced against each other.

In the chapter on diagnosis we observe nothing which has not already been noted by others.

In the chapter on treatment it is interesting to consider the devices which have been suggested, and at times by very high authority, for overcoming the dreadful possibilities of ectopic gestation; pressure by sand bags on the mother's abdomen, bleeding or purging, or administering various deadly drugs to the mother, even syphilizing her. It is strange that the direct method of treatment, the only logical treatment for such a serious condition, should have been so long delayed, and accepted with such hesitancy. What but extirpation of the source of the trouble can reach the requirements of the case? Into the details of the question of treatment we will not enter, except to state that we differ with the author in his fear that the vaginal operation involves the greater danger of sepsis, which would seem to be impossible from the more perfect drainage which it would allow. On the other hand, we are not ready to admit that the vaginal route should always be the one of choice, for to those who are accustomed to work through an abdominal incision the technical difficulties by the vaginal method would in some cases be quite insuperable. The dimensions which the literature of ectopic pregnancy has already reached are surprising, but we know of no better epitome of it to recommend to the profession, in addition to the work which is peculiar to the author, than the book which we have been considering.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume II. Nutritive Disorders. New York: William Wood & Co., 1895. Pp. iv–3 to 739.

THE second volume of this encyclopædic work is devoted to disorders of nutrition. Sir Dyce Duckworth is the author of the opening section, on Addison's disease and other diseases of the adrenal bodies, which are considered to be blood metabolizing glands. The author holds that many of the symptoms of Addison's disease depend upon the morbid condition of the abdominal nerve centres, and he acknowledges that there has been no gain in our knowledge of the treatment. The conditions of atrophy, abscess, hæmorrhage, cysts, embolism, fatty and lardaceous degenerations, carcinoma and sarcoma, tuberculosis, and hyperplasia of these organs are referred to.

The section on diabetes mellitus, by Dr. Carl von Noorden, of Frankfort, treats that disease as one in which "the capacity of the organism for burning up grape sugar is morbidly depressed," though the author acknowledges that there is no certain evidence that such a definition exhaustively explains the condition actually present. It will be seen that this definition closely resembles that of Dr. F. W. Pavy, that diabetes consists of a loss, or of more or less impairment, of the power that naturally disposes of ingested carbohydrate matter, and that prevents the latter from reaching the circulation in the form of free sugar. The author does not refer in his brief remarks on the formation of glycogen from albumin to Pavy's important contribution to this question, and, while he speculates on the "facultative formation" of grape sugar from fat, Pavy has demonstrated its occurrence. The old theories of diabetes being due to an over production or an under consumption of sugar, or to the two conditions acting together, are reviewed. Here, again, we would refer to the greater simplicity and cogency of Pavy's divisions; one class of glycosuria is due to a loss or impairment of the power of disposing of ingested carbohydrate matter, and another class is due to the preceding cause plus an intrinsic condition attended with the splitting up of the proteids of the body, with sugar as a cleavage product. The first may be controlled by dietetic management, the second may be so controlled only to a limited extent. The ætiology, pathology, complications, and treatment of the disease are discussed voluminously. It has not been the reviewer's experience that diabetic pruritus vulvæ is less frequently encountered in cleanly women. The sample bill of fare, with its five meals a day, is suited to German but not to American custom. We are glad to note the value the author places on exercise, an aid in treatment that is too often overlooked. In the list of tests preference is given to those of Trommer, Nylander, and Moore, though American and English physicians prefer Fehling's test.

Dr. T. J. Maclagan is the author of the section on rheumatism, in which there is a comprehensive review of the lactic-acid, the neurotic, and the miasmatic theories of the causation of rheumatism. He believes the rheumatic poison to be malarial in nature, probably a minute parasitic organism, and thinks it is destroyed by the administration of salicin or of salicylic acid. The complications of rheumatism are comprehensively described, and, while the chapter affords no new information, it is a complete review of our present knowledge of rheumatism.

The chapter on gout is by Dr. Henry M. Lyman, who shows that this disease is the most conspicuous manifestation of a peculiarly disordered condition of the constitution in which the processes of nutrition and elimination are involved. In the one hundred and eighty-two pages devoted to gout the author has discussed the principal matters relating to that disease.

Dr. Archibald E. Garrod is the author of the chapter on arthritis deformans. He reviews the various theories regarding the ætiology of this disease, and he believes that it is dependent upon nervous influences, reflex or other; in other words, that it is dystrophic in nature. This hypothesis that it is a functional disturbance of the trophic influences of the nervous centres is a working theory that affords a better explanation of the phenomena of the disease than any other theory.

The late Dr. Dujardin-Beaumetz wrote the section on diseases of the muscles. He has attempted, within a compass of forty-eight pages, to consider the inflammatory and trophic affections of the muscles. The latter class includes some of the most important diseases that engage the attention of physicians to-day, and the subject is treated insufficiently.

Dr. M. J. Oertel, of Munich, is the author of the section on obesity. He describes the history, ætiology, pathology, diagnosis, and prognosis of the disease, and under the head of treatment he gives the details of the method with which his name is associated.

The volume has an excellent index and is an up-to-date companion of its predecessor in the series.

Epitomes of Modern Surgical Progress. For Students and Practitioners. By E. Hurry Fenwick, F. R. C. S. Eng., Surgeon to the London Hospital, etc. Illustrated. Bristol: John Wright & Co., 1895. Pp. 219. [Price, 4s.]

This work is simply a collation of modern surgical methods in the treatment of genito-urinary diseases. It gives a brief description of the various procedures, with references to the original articles for those who wish for more minute data. It is, in fact, an elaboration of the articles in the late *Year Books* and Sajous's *Annual* upon these subjects. It will be convenient for hasty reference, as the gist of many articles can be obtained from it with very small outlay of time. There are evidences of carelessness in getting up the work. Moreover, we recall several very important contributions to the literature and progress of surgery in this line which are not mentioned at all. As an illustration of this, we would only mention the work of Dr. Cabot on the surgery of the ureter and Dr. Bell on stone in the bladder. In future editions a little more careful searching of the literature will add to the value of the book.

The History of Prostitution. Its Extent, Causes, and Effects throughout the World. By William W. Sanger, M. D., Resident Physician, Blackwell's Island, New York City, etc. With Numerous Editorial Notes and an Appendix. New York: The American Medical Press, 1895. Pp. xiv–17 to 709.

This volume is a reprint of the well-known work which the author brought down to 1858, and which an anonymous writer seeks to bring down to 1895 by means of a short appendix. Little has been added to our knowledge of the subject in general since the original publication of the work, and it is probable that the fact that the old edition was out of print had something to do with the appearance of this revision. The author of the appendix has evidently reviewed all the later literature on this topic in the preparation of his paper.

New Inventions, etc.

AN AIR PUMP AND NASAL INFLATOR.

By Andrew T. Veeder, M. D.,
PITTSBURGH.

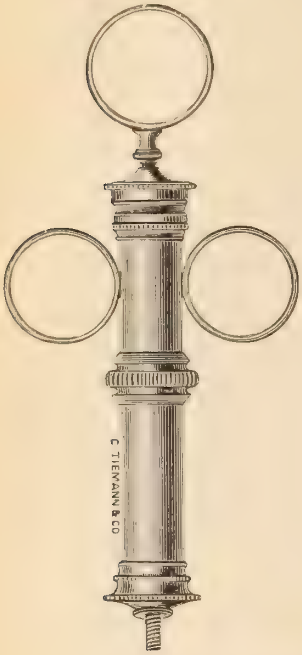
I herewith present the design of an air pump and new form of rubber bags (a nasal inflator), which I believe to be entirely new with regard to form or shape as appliances in nasal surgery and for nasal hæmorrhage. The illustration will give the idea.

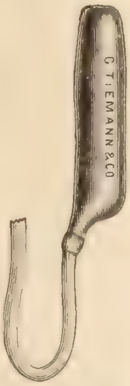
The rubber bags are placed within the nose with a delicate forceps (care being taken not to perforate the rubber) and attached to the slip-over nozzle of the air pump, which will be seen to have a stopcock and shouldered end, over which the long tube of the bag slips, the bag being inflated in position, ligated at any point close to the body of the bag within the nose, and cut off. When withdrawal is desired, either for cleansing or other reasons, cut the ligature or perforate the bag, letting out the air.

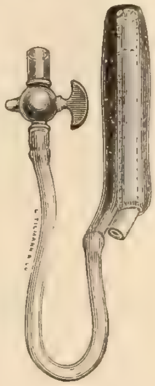
The bags can be made of any size or shape desired. Some are made with the sides thinner than the body of the bag for lateral pressure or expansion, while others are made of the same thickness throughout. They are especially designed for straightening the sæptum, after operations for deflection or fracture, to retain it in position with comfort to the patient as long as may be desired; also after operations to stop profuse hæmorrhages should they chance to take place.

The granulations which so freely spring up after operations for occluded nares may be kept down by pressure, healing hastened, and space gained.

I have designed three forms of rubber bags: One for retaining the sæptum in vertical position without the breathing tube in the centre, which may be used where there is plenty of breathing space on the opposite side; one with silver, aluminum, or soft-rubber tubes passing through from end to end for breathing holes, a transverse section of which would appear cone-shaped and a little obtuse at the top and base; and one with a vertical elongation of thin rubber, for expansion with the air pump to fill and exert pressure within the nares in cases of hæmorrhage otherwise difficult to control.







Messrs. Tiemann & Company, of New York, have made for me a variety of sizes of these rubber bags, as well as the air pump. I hereby express thanks for their carefulness, which has resulted in producing these instruments in excellent form, which, it seems to me, will be appreciated by many physicians.

Miscellany.

The Sleeping Sickness of Tropical Africa.—In the *Indian Medical Record* for June 1st Dr. Charles Forbes publishes an article on the symptoms, the pathology, the ætiology, and the treatment of this disease. This peculiar disorder, he says, is limited to the negro race, and, so far as he knows, has never affected a European. It undoubtedly leads ultimately to death, although, apparently, recoveries are recorded. It is commoner among men than among women, and attacks the patient at almost any period of life, although it is most commonly seen in persons between the ages of twelve and twenty. Little by little, says Dr. Forbes, the patient succumbs to feelings of somnolence, which gradually grow into a profound lethargy from which the patient may at first be roused, but only to sink back again into the same condition, which becomes more pronounced, and each period of sleep more protracted. They slowly increase in number, and the intervals between them grow shorter. This condition may go on for months, the malady gradually sapping the patient's strength: he refuses almost all food; his countenance gradually assumes a shriveled-up look, progressive atrophy and emaciation set in, and death from exhaustion or starvation supervenes at the end of three, six, or twelve months. It is notable, says the author, that just before death occurs the inclination to lethargy is not so great and the intellect seems to become clear before the brain ceases to act. The first symptom of the disease is a continual and persistent drooping of the eyelid in the daytime, even while the patient is at work. There is also enlargement of the lymphatic and cervical glands, especially the *glandulæ concatenatæ*, soon after the onset of the affection. At the time the patient may appear to be in his usual health, but the symptoms should be combated at the very outset by energetic measures of stimulation and purgation.

With regard to the pathology of the disease, says Dr. Forbes, poisoning by the continual absorption of the malarial protozoon must be taken into consideration, especially its powerful effects on the trophic nervous system, thereby interfering, by its own presence, with the blood-current, or by the production of toxines during its life by its own excretions of carbonic acid, etc.

At a few post-mortem examinations Dr. Forbes found the following morbid changes: Hyperæmia of the arachnoid membrane with slight signs of chronic inflammation in the other meninges. There was no special accumulation of fluid in the ventricles of the brain or in the subarachnoid space, etc. The brain substance in every case was somewhat paler than normal, pointing to existent anæmia of the cortical centres. The spleen was enlarged in one case, but Dr. Forbes thinks this was due to malarial taint. The enlargement of the cervical glands was well marked in every case. There was seen, on section of these glands, increased formation of the connective-tissue elements, with atrophy of the active gland cells. In two cases the blood showed the presence of *Filaria sanguinis hominis*, major and minor.

The causative factors of this disorder, says Dr. Forbes, have not yet been satisfactorily established. Several authors have endeavored to solve the problem, but with the most indifferent and uncertain results. The following theories, he says, are perhaps the most acceptable from a medical point of view: It may be due to a highly septic condition of the blood; this is partially borne out by the swelling of the glands and the degenerative changes that take place in them. It may be due, as Dr. Mackenzie seemed to think, to the presence of *Filaria sanguinis hominis* of both kinds—nocturna and diurna—germs in the blood. There is nothing to prove this, however, says the author, except the fact that these filarial germs have been met with in the blood of perhaps not more than half a dozen patients afflicted with the disease. Again, it may be a neurosis tending to the final establishment of cerebral anæmia and the imperfect nutrition of certain centres, such as the pituitary body, and eventually affecting the trophic system, causing somnolence, with ultimate progressive emaciation and death.

With regard to the treatment, says the author, it is of course only tentative, as we are in the dark as to the true cause of the disease. The following treatment has proved, in Dr. Forbes's experience, the most applicable in all tropical countries: At the onset give two compound cathartic pills at bedtime, and repeat the dose whenever it is necessary. Twice a day a sixtieth of a grain of strychnine should be given by the mouth if the patient is awake and subcutaneously if he is asleep. These doses are alternated occasionally with digitaline tabloids containing a hundredth of a grain. Even when he is at the last gasp, a tabloid of strychnine nitrate containing a fifteenth of a grain will rouse the patient. Twenty drops of ether injected over the cardiac area may prove useful.

The diet should be a meat one, and stimulants, such as whisky, may be allowed. Sea air might be beneficial. Galvanism over the spinal cord may serve to rouse the patient from his apathy. Where there is anæmia the following mixture is good:

℞	Tincture of digitalis.............	½ fl. drachm;
	Solution of perchloride of iron....	2 fl. drachms;
	Tincture of capsicum............	½ fl. drachm;
	Chloroform water...............	3 fl. oz.;
	Water........................	to 8 "

M. A fl. oz. to be taken three times a day.

Dr. Forbes's later experiences and researches have led him, he says, to think that thyreoid-gland extract would undoubtedly prove useful in stimulating cerebral circulation and in encouraging nutrition generally. If the disease is proved to be caused by the *Filaria sanguinis hominis*, the best drug to be used would be thymol or sulphur three times a day. At the same time the administration of tonics should be persevered in.

The Utah Territorial Examining Board.—A correspondent has sent us a copy of the questions given by the Territorial examining board for candidates to practise medicine and surgery in Utah. He says: "The board has been in existence three years and has never allowed a set of their papers to get out, much to the disapproval of the local members of the profession and candidates for examination. This set was copied by me while taking the examinations, and for the special purpose of publication for the benefit of the Utah doctors and as a sample of what may be expected by future applicants, also for comparison with examinations set by other State boards."

The questions are as follows:

Obstetrics and Gynæcology.

I. Describe briefly the latest and most approved method of conducting a labor and the management of the patient to the tenth day.

II. What are the symptoms of a concealed post-partum hæmorrhage and the treatment of same?

III. What are the causes of puerperal septicæmia and its treatment?

IV. How would you deliver the placenta?

V. When should the forceps be used, and what are its dangers?

VI. Should albumin appear early in the urine of a pregnant woman, what symptoms would you expect?

. . . .

I. What is the difference between version and flexion?

II. What are the methods of replacing retroversion and anteflexion when fixed by adhesions?

III. What are the ætiology, symptoms, and treatment of salpingitis?

IV. Describe an abdominal section complete.

Physiology and Hygiene.

I. Define physiology.

II. What is the function of the blood?

III. Does fibrin exist already formed in the blood?

IV. What are the nerves of the kidneys?

V. Do both kidneys act constantly?

VI. On what side of the brain is the speech centre best developed?

VII. What portion of the tongue perceives taste best?

VIII. Define hygiene.

IX. State some of the conditions which favor the growth of disease germs.

X. What is the best known preventive against catching cold?

Practice of Medicine and Pathology.

I. (*a*) What is typhoid fever?
(*b*) Give the pathological changes.
(*c*) The symptoms of the stage of development?
(*d*) The symptoms of the acute stage of fever?
(*e*) The symptoms of decline?

II. (*a*) What is relapsing fever?
(*b*) Ætiology?
(*c*) Pathological changes?
(*d*) Symptoms of the stage of invasion?
(*e*) Symptoms found in the height of the disease?
(*f*) Symptoms of decline?

III. (*a*) What is cerebro-spinal meningitis?
(*b*) Ætiology?
(*c*) Pathology?
(*d*) Course and sequelæ of the disease?

IV. (*a*) What is parotitis?
(*b*) Ætiology?
(*c*) Symptoms and course of the disease?

V. (*a*) What is pulmonary emphysema?
(*b*) Ætiology?
(*c*) Pathology?
(*d*) Symptoms?
(*e*) Physical signs?

VI. (*a*) What is croupous pneumonia?
(*b*) Ætiology?
(*c*) Pathology?
(*d*) Course of the disease?
(*e*) Physical signs?

VII. (*a*) What is angina pectoris?
(*b*) Symptoms?
(*c*) Treatment?

VIII. (*a*) What is catarrhal enteritis?
(*b*) Ætiology?
(*c*) Pathology?
(*d*) Symptoms?

IX. (*a*) What is cholera morbus?
(*b*) Ætiology?
(*c*) Pathology?
(*d*) Symptoms?

X. (*a*) What is the cause of acute general peritonitis?
(*b*) Pathology?
(*c*) Symptoms?

Anatomy and Surgery.

I. Describe the superficial veins of the upper and lower extremities.

II. Describe the salivary glands and ducts.

III. Describe the elbow joint.

IV. Describe the great sciatic nerve.

V. Give the general position and measurements of the liver.

. . . .

I. Describe tumors according to their structural elements, and give typical and atypical examples of each.

II. What general principles must be observed to secure success in plastic surgery?

III. What is the surgical treatment of pleural effusion? If you had occasion to irrigate, what solutions would you use and of what strength?

IV. How would you amputate the penis near the pubes?

V. What is the treatment of incised and lacerated wounds involving tendons and muscles?

Chemistry.

I. What becomes of nearly all the nitrogen taken into the body?

II. Describe recently passed normal urine.

III. Give the points to be considered in an analysis of urine, either normal or abnormal.

IV. What is the most important constituent of the urine, and what important office does it perform?

V. Give the specific gravity of normal urine.

VI. What important test should always precede a test for sugar?

VII. Give Trommer's test.

VIII. What is a base?

IX. Name the halogens.

X. What are their characteristics?

Materia Medica and Therapeutics.

I. (*a*) Name the mineral acids.
(*b*) Give their doses and therapeutical uses.

II. Tell of arsenic:
(*a*) Preparations and doses.
(*b*) Physiological action.
(*c*) Symptoms and treatment of arsenical poisoning.
(*d*) What are its therapeutical uses?

III. Tell of opium:
(*a*) Physiological action.
(*b*) Therapeutical uses.
(*c*) Symptoms and treatment of opium poisoning.

IV. Tell of mercury:
(*a*) Preparations and doses.
(*b*) Physiological action.
(*c*) When is it indicated and in what ways may it be given?

V. State of belladonna:
(*a*) Preparations and doses.
(*b*) Physiological action.
(*c*) Therapeutical uses.

VI. Give the doses of santonin, antimonii et potassii tartras, acidum arsenosum, bichloride of mercury, apomorphine, tincture of digitalis, chloral hydrate, tinctura opii deodorata, euonymin, paraldehyde, aromatic sulphuric acid, caffeine citrate, oil of aspidium, fluid extract of stillingia, fluid extract of veratrum viride.

VII. Write a prescription for a two year-old child with summer complaint, having eight or ten evacuations daily.

VIII. Name some of the most important anthelminthics.

IX. Name the cardiac stimulants.

X. What is rhubarb?
(*a*) Name the preparations and give doses.
(*b*) Physiological action.
(*c*) Conditions which call for it.

The Treatment of Flatulence.—In the July number of the *Practitioner* there is an article by Dr. Stephen Mackenzie on this subject in which he remarks that there are few disorders of common occurrence which, without being of a serious nature, give rise to so much discomfort as flatulence. In this article he excludes cases of gastrectasis and organic disease of the stomach and intestines, and speaks of flatulence in association with functional disease of the digestive organs or as the sole complaint.

With regard to the explanation of flatulence, the following theories have been advanced: 1. *Swallowed Air.*—A certain amount of air is swallowed by all persons in the process of mastication and deglutition, the air being incorporated with the bolus of food; but there is no reason to believe that more air is swallowed by sufferers from flatulence than by healthy persons. It is a physiological process. 2. *Fermentation.*—It is thought to be due to fermentative processes occurring in the food in the stomach. This is a view very commonly held, and apparently receives some support from the effects of antizymotic drugs in the treatment of flatulence. The subject, however, is one of much complexity and difficulty. The remedies most used, such as creosote and carbolic acid, are weak antizymotics, and are given in such small doses that it is scarcely credible that their action is so simple as to arrest fermentation and decomposition. Dr. Maguire has shown that, in the quantities in which these remedies are used in treating disorders of the stomach, they must be practically inert as antiseptics, though he fully admits their efficacy. Sir William Roberts has pointed out that fermentative processes are too slow to account for the rapid development of flatulence in dyspepsia; and he believes that fermentative processes, whether toruloid or bacterial, can only take place when food is retained in the stomach for a very long time. We must therefore, says the author, dismiss fermentation of the contents of the stomach as the source of the gas in cases of ordinary flatulence. 3. *The evolution of carbonic-acid gas in the stomach*, due to the action of residual acid mucus in the alkaline saliva swallowed with the food.—This, as pointed out by Sir William Roberts, is a possible cause of flatulence in acid dyspepsia. In many cases of flatulence, however, there is no evidence of acidity, and it will not, therefore, account for all cases. 4. *Regurgitation of carbonic acid from the duodenum.*—This, again, is a possible source of the gas that distends the stomach; but it can occur, probably, only when the gastric juice is hyperacid, or otherwise it would be of much commoner occurrence in the healthy. 5. *Want of gastric tonicity.*—Most of the sufferers from flatulence are the subjects of atonic dyspepsia, and there is no evidence of excess in quantity or altered character of the gastric juice, but the muscularity of the stomach, often in association with a general flabbiness of the whole muscular system, is at fault. Thus it happens that when food is taken into the stomach, this organ, instead of bracing itself to its work of muscular activity so as to move its contents about by vigorous peristaltic contractions, *relaxes*, and the gas, always present in the stomach, without undergoing any augmentation in *quantity*, undergoes an augmentation in *volume*, occupies a greater space, distends the viscus, impedes the descent of the diaphragm, causing an impediment to breathing, pushes up the heart, causing palpitation, and, by a reflex process, gives rise to the other symptoms which are so frequently associated with flatulence. The proofs that tonicity of the stomach is at fault, says the author, are numerous. The great majority of sufferers from this complaint present, if sought for, evidence of nervous exhaustion or nervous instability produced by a multitude of causes. This view, that flatulence in general is caused by a want of tone of the stomach, is also confirmed by the effects of treatment. In most cases relief is obtained, not by dieting, which, apart from correcting gross errors of management, is of little avail; not by correcting acidity, which is frequently absent; but by measures which, by improving the general health, increase the nervous vigor of the body and the tonicity of the gastric muscularis. That nervous influences are capable alone of causing flatulence there is abundant evidence to show.

The great majority of cases of flatulent dyspepsia are in patients who have got into a condition of impaired nervous vigor. Excessive mental application, with its attendant sedentary habits, or the latter alone, is a frequent cause. The want of attention to maintaining the full vigor of the body is alone sufficient. The excessive use of tea or coffee, the abuse of tobacco, and all other causes that bring about a debilitated condition of the nervous system are capable of inducing an enfeebled condition of the digestive organs. Flatulence is frequently associated with gastric catarrh, which contributes to its causation when present. In such cases the tongue is coated and often indented by the teeth. There is pain after eating, and there is tenderness in the epigastrium; it is generally accompanied by constipation. In many cases the functions of the stomach and bowels are in other respects well performed, the tongue is clean, and there is no pain, acidity, or heartburn.

With regard to the treatment, it is of greater importance to prescribe long hours of rest in the recumbent posture rather than to order a rigid or restricted dietary. Indigestible food of all kinds should, of course, be avoided, says Dr. Mackenzie, but a varied diet should be encouraged. The chief thing in the drug treatment is to aim at increasing the nervous vigor; consequently tonics, especially nerve tonics, are of the greatest importance.

Pre-eminent stand nux vomica and its alkaloid, strychnine. If we were restricted to a single remedy, the choice would certainly be strychnine. When flatulence is associated with pain after taking food, and a coated tongue, indicating gastritis, the following mixture should be given:

Potassii bicarb., vel sodii bicarb.....	ʒ ij;
Sp. ammon. arom............... ...	fl. ʒ jss.;
Liq. strychninæ....................	♏ xxx;
Sp. armoraciæ co., vel sp. cajuputi...	fl. ʒ jss.–fl. ʒ ij;
Sp. chloroformi....................	fl ʒ j;
Infus. calumbæ vel gentianæ co....ad	fl. ℥ vj.

A sixth part to be taken three times a day between meals. The alkali and the bitter clean the tongue and correct the disordered state of the gastric mucous membrane. The strychnine braces up the muscularis, while the carminatives, horseradish, or cajuput, and chloroform, excite reflex contractions of the stomach. If the pain in the stomach is great, 1 fl. drachm of Schacht's liquor bismuthi should be added to the mixture. In addition, the following pill should be prescribed:

Acid. carbolic............................	gr. xij;
Zinci valerianat........	gr. xx;
Aloinæ..................................	gr. vj;
Ext. nucis vom., gr. $\frac{1}{4}$, vel strychninæ......	gr. $\frac{1}{30}$;
Oleo-resin. capsici.......................	gtt. j.

Divide into twelve pills. One pill to be taken night and morning,

The aloes is to be omitted when the bowels act sufficiently; but in the great majority of cases constipation is present, due to torpor or want of tonicity of the colon, producing intestinal flatulence. Of the value of carbolic acid in such cases Dr. Mackenzie has not the smallest doubt, in spite of the difficulty, as already stated, of explaining its action. Menthol or creosote may be used to replace the carbolic acid, though the latter is, in his experience, by far the best. The compound asafœtida pill is also of much service, and may be used instead of the valerianate of zinc. When there is much tendency to spasm, $\frac{1}{4}$ or $\frac{1}{3}$ of a grain of extract of belladonna is a useful adjunct. In many cases where there is habitual constipation with frequent flatulence this pill should be taken, with any of the modifications suggested, for months together, and patients whom the author has watched for years go back to such a prescription from time to time with invariable relief. When acidity is present the same mixture and pill are frequently efficient, the alkali, given between meals, correcting the acidity in the residual mucus. In obstinate cases the bismuth lozenge of the British Pharmacopœia, or, better still, the modification of it suggested by Sir William Roberts, sucked slowly between meals, is sometimes of service. When, as not infrequently happens, there is no evidence of gastritis or acidity, tonics should be given between the meals. Quinine and strychnine are the most important. They may be combined with iron often with advantage; and Easton's syrup and the compound syrup of the hypophosphites are convenient forms of administration. When, apart from gastritis, there is marked pain—gastralgia—which occurs independently of taking food and is often relieved by a meal, arsenic is frequently of great service. It may be added to either the mixture or the pill. In enteralgia Indian hemp often answers better than any other remedy, and may be given with the pill, in doses of $\frac{1}{3}$ of a grain, twice or three times a day. For the violent, spasmodic attacks with great distention of the stomach and intestines, to which some sufferers from flatulence are liable, and which cause so much distress and often excite severe anxiety in both patients and their relatives, a powerful carminative and antispasmodic mixture should be in the hands of the patient to be used whenever the attacks occur. The following is nearly always efficacious:

$$\left.\begin{array}{l}\text{Sp. cajuputi,}\\ \text{Sp. ammon. arom.,}\\ \text{Sp. chloroformi,}\end{array}\right\}\ldots\ldots\ldots\ldots\text{āā } \tfrac{1}{2}\text{ fl. oz.}$$

A teaspoonful, in a wineglassful of water, may be taken every half hour or every quarter of an hour until relief is obtained.

A mixture such as this relaxes spasm of the cardia, pylorus, and intestine; it causes reflex contractions of the muscular coats of the stomach and bowels; and, by permitting and promoting the escape of gas, affords prompt relief in nearly every case. After considerable experience of the use of charcoal, the author thinks that it is of little service in ordinary cases of flatulence. Permeated as it must be with saliva when taken in the form of biscuits, mixed with the fluid contents of the stomach, its powers of absorbing gas must be extremely small; and, as has been seen, putrefactive changes, over which it might have some action, are not in operation in such cases. The cases in which charcoal biscuits are useful in flatulence appear to him to be those with acid dyspepsia, where, like the bismuth lozenges, it causes an extra amount of alkaline saliva to be swallowed, which may lessen the acidity of the mucus in the stomach. Dr. Mackenzie urges the importance of tonics and antispasmodics as the rational and effective treatment of flatulence, by improving the muscular tone of the stomach.

The American Climatological Association.—The twelfth annual meeting was held in Hot Springs, Va., on June 13th, 14th, and 15th. The president, Dr. S. E. Solly, of Colorado, made a brief introductory address. Dr. Guy Hinsdale, of Philadelphia, read a paper on Recent Measures for the Prevention and Treatment of Tuberculosis, reviewing the provision made in England, Germany, France, and the United States for the care and treatment of the consumptive poor. Dr. Frederick I. Knight, of Boston, reported that the committee having this matter in hand in Massachusetts had recently secured an appropriation of $150,000 from the legislature for the erection of a hospital. The following papers were also read at the first session: Clinical Results of the Use of Tuberculin, by Dr. H. L. Taylor, of St. Paul; A Study of the Causes of Subclavian Murmurs, by Dr. R. G. Curtin, of Philadelphia; and A Case of Traumatic Cardiac Neurosis, by Dr. J. C. Mulhall, of St. Louis. In the absence of Dr. V. Y. Bowditch, the chairman, Dr. E. O. Otis, of Boston, presented the report of the committee on health resorts in the United States. It is announced that the work of this committee will appear from time to time in the *Transactions* of the society and ultimately be published in book form. During the sessions of the second day, the following papers were read: Sunshine Statistics, by Professor Mark W. Harrington, chief of the Weather Bureau, Washington; Mean Atmospheric Temperatures, by Professor W. F. R. Phillipa, of the Weather Bureau, Washington; Mineral Springs of the United States, by Dr. H. C. Peale, of Washington; The Ætiology and Treatment of Certain Kinds of Cough, by Dr. Beverley Robinson, of New York; A Case of Simple Chronic Pleural Effusion: its Final Outcome, by Dr. J. C. Mulhall, of St. Louis; Some Observations which appear to Establish the Aerial Transportation of Malarial Germs, by Dr. Richard C. Newton, of Montclair, N. J.; Two Factors in the Production of Disease in New York City, by Dr. Thomas Darlington, Jr., of New York; The Influence of Heredity upon the Progress of Phthisis, by Dr. S. E. Solly, of Colorado. Officers for the ensuing year were elected as follows: President, Dr. James B. Walker, of Philadelphia; vice-president, Dr. C. E. Quimby, of New York; treasurer, Dr. James E. Hart, of Colorado; secretary, Dr. Guy Hinsdale, of Philadelphia. On motion of Dr. Frederick I. Knight, the following resolution was unanimously adopted:

Whereas, Since tuberculosis has been demonstrated to be a communicable disease, it has become doubly desirable that hospitals for the reception of the poor afflicted with this disease should be established.

Resolved, That the American Climatological Association recommend the establishment of such hospitals in every State, not only for the relief of the great suffering attending this disease among the poor, but also as a protection of the community against its spread.

At the request of the association, Dr. C. E. Quimby presented the following: "Duty and established custom make it fitting that in a formal manner your committee report to this association the death, upon January 23, 1895, of our former president and member, Alfred L. Loomis, M. D., LL. D. Love and respect make it imperative that in so doing we dwell for a moment upon the many ties which united us, and make some record by which his many and varied gifts and qualities, which have enriched us, may be made a powerful influence upon those who are to continue this association.

"Dr. Loomis was born in Bennington, Vt., in 1831. His early education was largely under private tutors at Woodstock, Vt., while his academic degree was taken at Union College. After graduation, in 1852, at the College of Physicians and Surgeons, he served the usual term in Bellevue Hospital. Very soon after starting in private practice he was appointed visiting physician to the same hospital, where he continued in active duty until the day of his final illness. For more than thirty years Dr. Loomis held the chair of pathology and practice in the Medical Department of the University of the City of New York, and to his energy and wise efforts more than to any other force may be attributed the growth and prosperity of that institution.

"In his professional life Dr. Loomis was pre-eminently an active, energetic, sagacious physician. In all his relations to medicine and medical progress he was conservatively but uniformly progressive, never assuming an advanced position until fully or even superfluously convinced of its accuracy, he was unfaltering in its defense. A similar faith in the eventual success of truth made him unable even to consider the possibility of failure in any purpose once undertaken.

"Dr. Loomis was one of the faithful band who originated this association, and we all well know how faithfully he worked for its advancement and success. He was its first president and was again its president during the first Congress of American Physicians and Surgeons assembled in Washington, and, as our delegate, was elected the president of the third congress. At one time efforts to merge the American Climatological Association into another national organization threatened to destroy it. Dr. Loomis averted the danger, if such existed.

"Dr. Loomis had a most enviable reputation, not only in his professional but also in his private life. He was a frequent contributor to the proceedings of this association.

"In expressing our sense of personal as well as united loss in the death of Dr. Loomis, we realize that we can do him no greater honor than to present this record of his work for a perpetual stimulus to members of this association."

The Third International Congress of Physiologists, as we have already announced, will be held in September, 1895, from the 9th to the 13th of the month, at Bern, Switzerland. Professor Kronecker, director of the Physiological Institute of the University of Bern, has kindly expressed his readiness to afford to members of the congress all facilities for demonstration and experiment, as well as for the exhibition of scientific apparatus. It is particularly desirable that those intending to avail themselves of Professor Kronecker's assistance should let him know what their requirements are not later than June 30th. In connection with the congress an exhibition of physiological apparatus will be held. Exhibits may be contributed by all members of the congress, by the directors of physiological laboratories, and by makers recommended by any member of the congress, or by the director of a physiological laboratory. The exhibition of apparatus will open two days before the congress, and will close two days after the congress. Those who are invited to attend the congress, and intend to be present, are asked to send word of their acceptance, and, if possible, the title of their communications, either to Professor Hugo Kronecker, Bern, or to Mr. C. S. Sherrington, general secretary for the English language, 27 St. George's Square, S. W., London, before August 1st. Americans may send the titles of communications to Mr. Frederic S. Lee, secretary of the American Physiological Society, Columbia College, New York. Each member of the congress is required to contribute the sum of ten francs toward defraying the expenses of the meetings; he will obtain in receipt from the president, Professor Kronecker, a card of membership of the congress.

The Late Dr. John M. Byron.—At a meeting of the Medical Board of Columbus Hospital, held July 8, 1895, the following action was taken relative to the death of Dr. John M. Byron, late visiting physician and pathologist to the hospital:

1. That we deeply regret the loss of Dr. John M. Byron, visiting physician and pathologist to Columbus Hospital, and that we desire to place in the records of the hospital the following sentiments as an expression of our regard for and appreciation of our late associate.

2. That in his death the science of bacteriology has lost a student whose intelligent devotion to investigation would have placed him among the most illustrious workers of that branch of medicine.

3. That his successful career, prematurely cut short by an infection derived, as he believed, from his daily laboratory work, has furnished another example of that true self-sacrifice so characteristic of medical men in their devotion to duty.

4. That we deeply sympathize with his family in their bereavement, and it is hereby ordered that the foregoing record be transmitted to them and sent to the local medical journals for publication.

Stephen Smith,
[Signed.] *President of the Medical Board.*
Charles H. Lewis, *Secretary.*

The Litchfield County, Connecticut, Medical Association met in Norfolk on Tuesday, the 9th inst. Papers were to be read by Dr. William H. Welch, of Baltimore, and Dr. William H. Porter, of New York.

The State Board of Medical Examiners of New Jersey.—We learn that at the June examinations eleven out of twenty-six candidates for the license to practise were rejected.

The Columbus Hospital.—We learn that Dr. F. Ferguson has been appointed visiting physician and pathologist, and Dr. George F. Shrady a visiting surgeon.

Original Communications.

MALIGNANT ADENOMA OF THE UTERUS.*

By WILLIAM S. STONE, M. D.,
ALUMNI FELLOW IN PATHOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS; ASSISTANT IN THE DEPARTMENT OF DISEASES OF WOMEN, VANDERBILT CLINIC, NEW YORK.

The class of new growths to which the term adenoma has been applied offers a field for study of much pathological and clinical interest. Some of these neoplasms present histological forms which differ but little from the more marked grades of glandular hypertrophy and hyperplasia. Other forms, although presenting certain anatomical distinctions, do not differ at all from other malignant new growths, either in their clinical history, their mode and rapidity of growth, or in their tendency to recurrence.

Adenomata, we know, occur in many different organs, as, for example, the thyreoid gland, liver, kidney, intestine, mamma, ovary, and uterus. The uterus offers a good example of an organ in which they frequently display their malignant qualities. The uterine mucosa, too, is so frequently the seat of extensive glandular hyperplasia, that it is often from curettings hard to distinguish these anatomical changes from those of a tumor.

Waldeyer (1), writing in 1867, characterized adenoma as a reproduction of glands of the normal type, in which the epithelial cells were regularly arranged on a distinct membrana propria. We know now that this definition might apply to hyperplasia, and Waldeyer not having examined any adenomata of the uterus, the particular class which we call malignant adenomata was not included in his description.

In the latest times, Delafield and Prudden (2) describe the adenomata in general as benign tumors, but mention the occurrence of malignant adenomata in certain organs, and place them on the border line between adenomata and carcinomata.

As most of the reported cases of adenoma of the uterus contain meagre descriptions of their anatomical structure, and as the exact nature of the tumors has been variously interpreted, there is much uncertainty as to the identity of some of these cases with the neoplasms now described as malignant adenoma.

Coe (3) has written twice upon the subject, giving an historical *résumé* of cases reported, and adding three cases of his own. His conclusions are: "The term benign adenoma of the uterus is a misnomer; neither glandular hyperplasia nor adenoid polypus is adenoma; the only true adenoma of the uterus is essentially malignant adenoma, anatomically, because it invades deeper structures, and clinically, because it recurs after removal, and eventually assumes a more malignant character. Malignant adenoma at first is not identical with adeno-carcinoma, but is an initial stage of it; endometritis glandularis hyperplastica is not adenoma, because the mucosa is generally hypertrophied without marked proliferation of pre-existing glands, and the process is confined to the mucous layer and proliferation is always typical." With regard to diagnosis and treatment, he states that rapid recurrence after curetting should suggest malignant adenoma rather than glandular hyperplasia, although the disease may have existed for a long time and the curettings may not present the anatomical structure of a malignant neoplasm.

Ruge and Veit (4) described malignant adenoma of the uterus, and, although they suggested that it might be a transitional form between glandular hyperplasia and cancer, never had seen cases which could prove this relation.

Pozzi (5) says: "Lesions may begin as a slight glandular endometritis, may become, if inveterate, a glandular endometritis of the most pronounced type (typical benign adenoma); may then degenerate into an atypical malignant adenoma, and this is the first stage of cancer." He makes the difference between benign and malignant adenoma to depend upon the presence in the former of a single layer of epithelium, a certain amount of normal interglandular tissue, and a clear line between the glandular and muscular layers.

Schröder (6) maintains that no sharp distinction between glandular hyperplasia and adenoma can be made; that there are extreme forms of the latter which suggest malignancy, and frequently go over into cancer.

Fürst (7) is very extreme in his suggestions for treatment. Although he regards glandular hyperplasia as benign, he does not think it is wise to be content with curetting, but "to strive for excision, as the new formation inclines to malignant degeneration."

C. Ruge (8) uses the terms benign and malignant adenoma. By the former he understands simple glandular hyperplasia. "In malignant adenoma there are changes in the entire uterine tissue. Metastases occur in other organs. Solid cell processes invade the deeper parts to a greater extent than is common in cancer." These last changes are certainly those of true cancer.

Lander and Abel (9) use the terms simple adenoma, meaning glandular hyperplasia, in contradistinction to malignant adenoma. They consider the amount of relatively unchanged interglandular tissue as the best guide in distinguishing the two forms.

Ziegler (10) considers adenomata of mucous membrane in general as not sharply differing from cancer.

Williams (11) thinks adenoma in the uterus is probably always malignant.

J. Veit (12) says: "There is a gradual transition from adenoma to cancer."

Cushing (13) describes malignant adenoma of the uterus as "an adenomatous thickening of the mucous membrane of the body of the uterus in elderly women, which finally degenerates into carcinoma."

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* The writer has carried out this work in the Pathological Laboratory of the College of Physicians and Surgeons, and is indebted to Dr. G. C. Freeborn for many timely suggestions, and for the use of the slide from which Drawing 2 is made. For the specimens and clinical material the writer is also greatly indebted to Professor G. M. Tuttle and Dr. E. B. Cragin.

The majority of writers, then, classify the marked cases of chronic endometritis with glandular hyperplasia among the adenomata. So long as the reproduction of the glands conforms perfectly to the normal gland type, they speak of them as benign. When the numerical increase becomes excessive, and the epithelium tends to form in several layers; when the interglandular tissue becomes scanty, and the tissue consists almost entirely of new-formed glands, and inroads are made into neighboring tissues, they are called malignant. Furthermore, the latter form of lesion is generally considered as the initial stage of cancer. In other words, simply hypertrophy and hyperplasia are not distinguished from the changes existing in a well-defined tumor. Many writers, too, wrongly speak of malignant degeneration of a tumor, using the term degeneration in the same way that it is used in speaking of fatty or amyloid degeneration.

Before taking up the four cases which the present writer has to offer as examples of malignant adenoma of the uterus, it was thought that it might be useful to give a general description of the curettings from nine cases of well-marked adenomatous hyperplasia.

In these nine cases of adenomatous hyperplasia, the increase in the size and the number of the glands was very well marked. The epithelium, for the most part, consisted of one layer resting on a distinct membrana propria. The stroma was considerable in amount and showed in some cases the changes of a simple exudative inflammation, while in others there was the formation of new connective tissue. In other words, the glandular hyperplasia seemed to be simply a part of or a result of an ordinary chronic inflammation of the mucous membrane. Fig. 1 represents the condition in one of these cases.

The ages of these patients from which the curettings were taken range from twenty-eight to forty-seven. The most marked condition was in a patient of thirty-eight years. Five of the cases had been curetted before with relief for from six months to two years. Two of the cases were thought to be malignant clinically, because of their loss of flesh and poor general condition. This cachexia could readily be ascribed to the severe and protracted hæmorrhages from which they had suffered. There were no appearances in these curettings which would warrant their classification among the neoplasms or suggest malignancy. The possibility of their future development into a malignant new growth can not be denied, but in the writer's experience thorough curetting and appropriate after-treatment cure most cases of chronic endometritis with glandular hyperplasia.

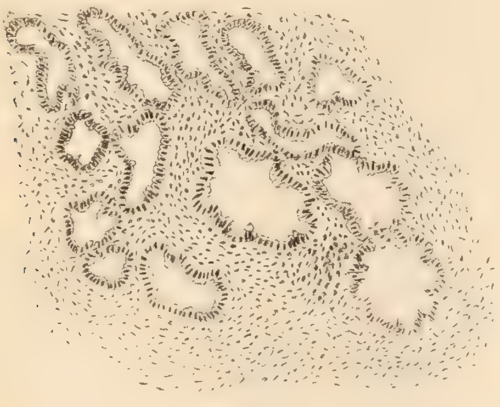

FIG. 1.

The curettings of two other cases, representing a more serious condition, have been very recently examined. In both of them the larger part of the curettings show simply a glandular hyperplasia; but there are a few places in one case where there is an excessive numerical increase of glands and proliferation of the lining epithelium into several layers, with a very small amount of intervening stroma. In all parts a severe exudative inflammation is in progress, leucocytes almost filling the lumina of the glands. We have here, then, a beginning malignant adenoma. In a few places in the other case there are alveoli filled with regularly arranged epithelium, and with no trace of normal gland structure left. There is no exudative inflammation present, and glandular hyperplasia is not so well marked. In this case there is certainly a beginning carcinoma.

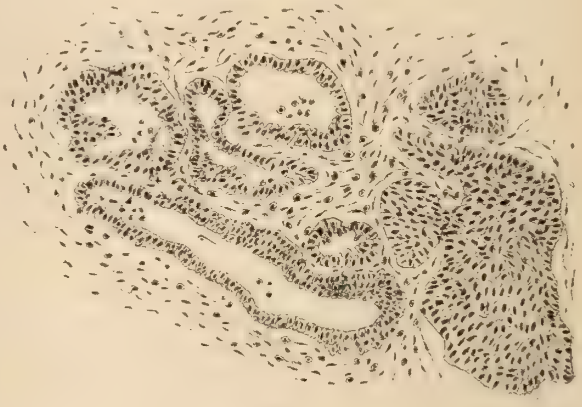

FIG. 2.

In both of these latter cases we have a simple benign process coexisting with a certain amount of excessive and lawless growth. We might interpret these changes as representing different steps of the same process if we knew certainly that they did not begin independently of each other.

Fig. 2 represents a section of some curettings showing coexistence of adenoma and carcinoma. On the left are seen the enlarged glands lying close together. The epithelium has proliferated into several layers, but the gland type is preserved. On the right the alveoli are completely filled with epithelium, and we have true cancer.

In contrast to the previous conditions, the writer wishes to describe four cases of well-marked malignant adenoma.

CASE I.—Patient, forty-eight years of age, had had three children, the last one fourteen years ago. Her menstruation had always been regular until two years and a half before admission to the hospital. Since then she has flowed almost continuously, and has lost flesh rapidly for seven months, and during the last four months has suffered from severe pains in the lower part of abdomen and back.

Examination.—Patient is pale and thin. Palpation reveals a hard, smooth tumor in the median line of the lower part of abdomen, reaching to the umbilicus above. Bimanual examination shows the tumor to be an enlarged uterus. The cervix is short, soft, and the external os admits one finger. Behind and to the left of the uterus is a hard, immovable tumor, which with the uterus completely fills the pelvis and lower part of abdomen.

Patient was curetted, and, a large amount of fleshy material having been scraped out, the entire uterus and tumor behind, with an indurated portion of the vaginal wall, were removed through the abdomen. The uterus externally resembles in its form one at full term of pregnancy, its cervix having almost disappeared. It measures from fundus to external os seven inches, and across the fundus between the tubal openings four inches. The interior is completely lined by a soft, irregular new growth, having elevations which project like polypi into the uterine cavity (see Fig. 3). One half of the uterine wall, which measures an inch and three quarters in thickness, consists of the new growth.

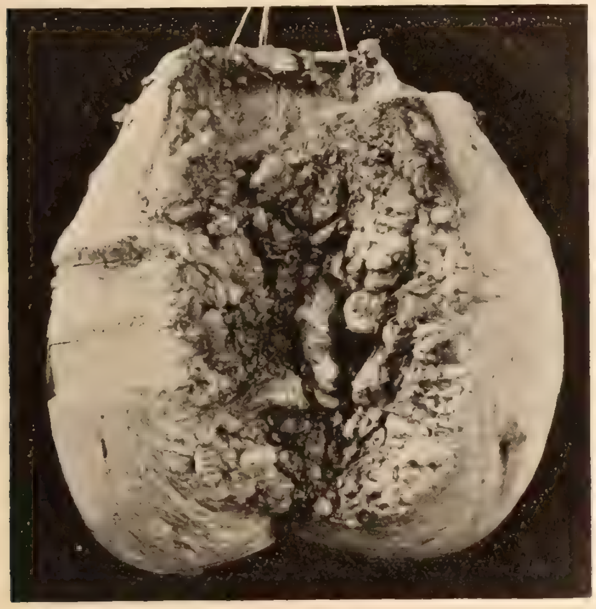

Fig. 3.

The other tumor, which apparently originated from the left ovary, is nearly circular in form, with a somewhat irregular surface, and measures four inches in diameter. It is solid throughout, its cut section being of a yellowish-white color, not exactly homogeneous in structure, but traversed by numerous bands of slightly paler color than the rest of the tissue. The apparently normal left tube runs over the tumor. The right ovary and tube are normal.

Sections were cut from different portions of the uterine wall, ovarian tumor, left tube, and broad ligament, and stained with hæmotoxylin and eosin and with picro-acid fuchsine.

The left tube and broad ligament show no invasion by the new growth. One half of the uterine wall consists of a mass of alveoli closely packed together, with a scanty supply of intervening stroma, resembling in structure the normal uterine glands. The alveoli are generally lined with two or more layers of epithelium. A lumen is always present, although some of the alveoli contain a large number of leucocytes. The hypertrophied muscular layer is irregularly invaded by this adenomatous growth.

Fig. 4 is a photograph with a low power of a section of the new growth. Fig. 5 is a drawing of the same with high power.

The excised portions of the vaginal wall also consist of this same adenomatous growth, the alveoli resembling normal glands and showing no true carcinomatous structure.

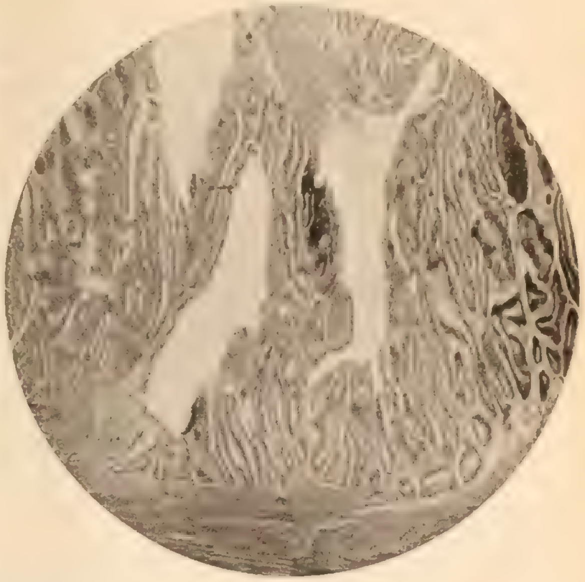

Fig. 4.

The ovarian tumor consists of a mass of alveoli, some of them having the epithelium regularly arranged like normal glands, others being filled with epithelial cells and leaving no trace of normal gland structure. Between the alveoli is a stroma consisting of irregularly branching trabeculæ with a smooth, homogeneous appearance, resembling hyaline degeneration. A few connective-tissue cells are seen in the trabeculæ, especially in the larger ones near the periphery of the tumor, and none of the chemical tests for hyalin degeneration give the proper reaction, so that these trabeculæ, although closely resembling hyalin degeneration in many places, are thought to consist of very dense connective tissue.

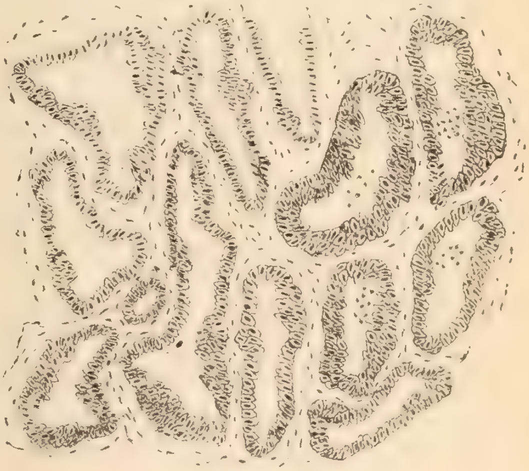

Fig. 5.

Diagnosis of the uterine tumor is malignant adenoma; of the ovarian tumor, adeno-carcinoma.

Case II.—A single woman, aged fifty-four, had suffered from irregular uterine hæmorrhages, increasing size of abdomen, loss of flesh, and poor general health for two years. Examination of abdomen shows a hard, irregular-shaped tumor completely filling the lower half of abdomen and pelvis.

Laparotomy revealed a large uterus filled with fibro-myomata, attached to the left of which, by means of the tube and numerous adhesions, was a soft, friable mass about the size of an orange. The entire uterus and tumor were removed.

The large subperitoneal fibro-myomata, measuring about four inches in diameter, are situated at the fundus. Numerous small ones are situated in the uterine wall. One small pedunculated fibroid, attached to the fundus and having a shaggy covering, projects into the uterine canal. The uterine canal measures four inches and a half from fundus to external os and is lined by a soft, irregular growth, particularly at about the middle of the body.

The ovarian tumor consists of a rather firm central mass covered by a very soft papillomatous outgrowth. Microscopic examination of the subperitoneal fibroids shows the structure of an ordinary fibro-myoma. The pedunculated submucous tumor consists of a large number of well-formed glands with considerable intervening stroma. The entire body of the uterus is lined internally by an adenomatous growth, in all respects resembling the growths in the uterus in Case I, except that it is not so extensive. The growth in many places has superficially invaded the muscular coat.

Diagnosis is malignant adenoma occurring in a uterus the seat of multiple fibro-myomata.

The ovarian tumor consists of a papillary fibrous framework covered by a mass of alveoli, some of which preserve the normal gland structure, while others are simply masses of epithelial cells.

Case III.—A married woman, aged sixty-nine, had been suffering from irregular uterine hæmorrhages for over a year, and had been curetted three times. The diagnosis of the first curettings had been simple adenoma; of the third, malignant adenoma.

Uterus was removed *per vaginam.* It measures four inches from fundus to external os and two inches and a half across the fundus between the tubal openings. The interior of the uterine body is covered by an irregular growth, not so extensively as the first case, but much more so than the second. At the fundus the uterine wall is an inch in thickness and chiefly consists of this new growth. In one place only an eighth of an inch of muscular tissue remains. Near the internal os the growth has not encroached upon the muscular tissue so extensively, and the cervix is not at all invaded.

Microscopical examination of the growth shows it to have the same structure as in the other two cases. There are irregular invasions into the muscular tissue, and here and there, deep in the muscular coat, isolated patches of glands are found, conforming in general to normal utricular glands.

There are no evidences that the new growth has gone beyond the uterus, although in one place, at the fundus, it has very closely approached the peritoneal coat.

Diagnosis is malignant adenoma.

Case IV.—A married woman, aged forty, had suffered from pain in the back and iliac regions for three years. During the six months previous to her admission to the hospital pain had become much worse and she had rapidly lost flesh, and for three months had had a foul discharge. Menstruation had been normal.

Examination under ether revealed an enlarged uterus, retroverted and adherent. Both appendages were prolapsed and adherent to the uterus. A hard mass was felt on each side of the uterus. Microscopic examination of the curettings removed at the time of the examination under ether show a great mass of glands lined by several layers of epithelium, but always preserving a general adenomatous structure.

On account of the infiltration on the sides of the uterus extirpation was not attempted. Patient died two months later. No post-mortem examination was made.

In this case, of course, it is impossible to be certain that there was no carcinomatous growth in or about the uterus, but a large amount of material was removed at the curettings which only showed the structure of malignant adenoma.

These four cases, as examples of malignant adenoma of the uterus, present some interesting points. The anatomical structure of the new growth in all of them is the same.

They all present more active and destructive changes than do cases of simple glandular hyperplasia, and they all differ anatomically from cases of cancer. Cases I and II are interesting because the adenomatous growth in the uterus is associated with carcinoma in the ovary.

Case II was interesting because of the association of the new growth with a uterus filled with fibr-omyomata.

Cases I and III show well the encroachment of the new growth upon the neighboring tissue and the preservation of the gland type in these invasions. Even in Case I, where the adenomatous growth has spread beyond the uterus, the invaded parts of the vaginal wall consist of glands more nearly like normal uterine glands than those in the uterus. In all of the cases the cervical mucous membrane was not invaded.

Summary.—There occurs in the uterine mucous membrane a moderate glandular hypertrophy and hyperplasia, associated with chronic inflammation, which is entirely distinct from any tumors in the same region. The glands are simply more tortuous and more numerous, and the lumen is larger, but their general structure is the same as that of normal utricular glands.

More marked examples of glandular hyperplasia occur which often simulate clinically malignant neoplasms. They often occur near the menopause, may cause severe hæmorrhages, and impair the general health. Sometimes they have to be curetted several times before the condition disappears.

Anatomically these latter cases are characterized by an excessive number of glands, but the epithelium does not show any marked tendency toward proliferation, and there is still a large amount of stroma left in which inflammatory changes are going on. There is an increased number of stroma cells and an infiltration with leucocytes; there are new blood-vessels, and oftentimes interstitial hæmorrhages occur. The whole picture is one of inflammation, in which the glands are increasing in number simply as part of the general inflammation.

Some of these more marked cases probably do become malignant, and therefore a careful microscopical examination of all curettings should be made.

Although a positive diagnosis between adenomatous hyperplasia and adenoma may not always be made from the curettings, yet it is possible in the large majority of cases to form a conclusion of sufficient accuracy.

Adenomata occurring in the uterine mucosa are tumors consisting almost entirely of glands which conform in general to the normal gland type. There is very little interglandular tissue, and, while there may be an inflammation going on, it is entirely subsidiary to the main process—*i. e.*, growth of new glands. The epithelium lining the alveoli shows a tendency to proliferate, but a lumen or the suggestion of a lumen exists.

Adenomata in the uterus are always malignant, because they invade neighboring tissues and recur unless completely removed.

Adenoma in the uterus, although it may represent a transitional step between simple glandular hyperplasia and carcinoma, certainly often develops to a high degree without losing the anatomical characteristics of adenoma.

Adenoma usually, perhaps always, begins in the body of the uterus, and does not involve the cervical mucous membrane; and, while it invades the muscular layers and eventually goes beyond the uterus, it remains confined to the mucous membrane longer than carcinoma does. It might be described as spreading around in the mucous membrane rather than burrowing through the different layers, and thus quickly involving other parts.

Compared with carcinoma of the uterus clinically, we find that adenoma of the uterus usually occurs later in life than carcinoma, and lasts longer without causing cachexia. Frequently we get a history of irregular hæmorrhages for several years, during which time the patient has been curetted several times without permanent relief. Pain and discharge are not such prominent symptoms in adenoma as in carcinoma. The enlargement of the uterus is more marked in adenoma.

The prognosis in adenoma after removal is better than in carcinoma, because from its manner of growth complete extirpation of the growth is more certain.

The treatment for adenoma of the uterus should be the same as for carcinoma.

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The Disadvantages of Wilde's Incision.—Chipault and Demoulin (*Ann. des mal. de l'oreille et du larynx*, April, 1895) report two cases of ear trouble, in which Wilde's incision aided in introducing infection into the system, and causing in one case the grave complication of neuritis of the facial nerve, and in the other osteitis of the atlas. They, therefore, absolutely condemn the superficial mastoid incision, which does not open up any local focus of suppuration.

TOXIC PARAPLEGIA.*

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The case which I report to-day was not seen by me until all lesions of the paraplegia had disappeared. I give you his history as he gave it to me, and make no apologies for presenting it under such circumstances, as it still presents features of interest and is a history which can well engage our attention for a short time. Many parts of his history are incomplete, as he left Denver before I had the opportunity of studying his case as I should like to have done:

William A., aged twenty-three years, from Missouri, painter, single, came to Colorado thirteen years ago. He came to me because of an open sore on the inner side of his right leg. After giving me a short history of paralysis, I obtained from him the following: His father died at the age of forty-four of paralysis, which patient believes to have been an apoplectic stroke. He was paralyzed for six weeks before he died. His mother, one sister, and two brothers are living and well. One sister died of pneumonia. There is no consumption in the family. Patient is the oldest child.

As a child he was well and strong, and he had but few of the diseases of childhood. As a boy he enjoyed good health. When about eight years of age he began drinking strong liquor. His father was a saloon keeper, and he allowed the patient to indulge in liquor whenever he wanted it. He seemed to have a taste for it, and even before twelve years of age he had been on many a spree. Since he began making money, at about twelve, all of his money has gone for strong drink. He has been drunk a great number of times. He took liquor whenever he could get it, and often drank on an empty stomach. When he could get whisky he drank that, but when he got hard up he bought alcohol, diluted it one half, and drank it instead. There have been months when he was never out from under the influence of alcohol. When he sprees, it never leaves him with any ill effects, as he can go right to work.

At nine years of age he began smoking cigarettes, and until his paralysis he smoked from ten to forty cigarettes every day. He not only smoked all day, but he smoked after going to bed and after awakening in the morning, and occasionally on awakening during the night. He has never used opium or other narcotics. He denies syphilis. He has been exposed, but he has never had any sore.

He began painting three years and a half ago. He worked at this for eighteen months, when his attack of paralysis occurred. Three weeks before this he got quite wet. The attack was preceded for two weeks by sharp, constant pain in the small of the back and by a numb, tingling feeling in the legs and arms, with much tenderness of these parts. This array of symptoms progressively increased, and he went to bed one night in January, 1892, feeling rather poorly, and the next morning he found himself paralyzed in both arms and legs, with, as he says, complete loss of sensation in these parts, especially marked in the legs.

He says he could move his head, face, and tongue. He could not pass his urine or fæces, and they had to be attended to by a physician. For two weeks he lay paralyzed without being able to move a muscle of his extremities. A little motion then returned to his right hand and soon to his right arm. In another week he was able to use his left arm to a slight extent. For two months he was unable to move his legs. Then he began to move his toes. Slowly he became able to move all parts. The bladder and bowels began recovering in nine days, but remained partially affected for several weeks, in that he would have a little difficulty in holding liquid fæces, and water would flow from the bladder very quickly if Nature's call was not promptly attended to.

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* Read before the Colorado State Medical Society, June 19, 1895.

He was in bed altogether for over four months. He was then able to be up on crutches. In six weeks he was able to walk well. During his paralysis the only pain he suffered was of a sharp, constant, burning character, over the anterior surface of both thighs and near the shoulders. With this pain he had much tenderness on pressure in the paralyzed parts.

While paralyzed he noticed that both legs were swollen, and that the veins of the legs and abdomen were prominent. This he had not noticed before his paralysis. Soon after being able to walk around, the legs being still swollen, he scratched the inner surface of the right leg and a large sore developed. This remained an open sore until three months ago. It then healed and his present sore began a month ago.

The swelling of the legs still continues. It goes down during the night to return after he is on his feet for some little time.

In July, 1893, the right leg drew up one night and remained stiff and sore for one week, when it became normal again. Concerning this trouble patient is very indefinite and tells his story as though he was not sure of his ground. In a similar manner he tells of some fainting attacks which he has had since his paralysis.

His physical state at present is excellent (this in March, 1894). He sleeps well, has a good appetite, his bowels are regular, he has no cough, and he makes his urine all right. The pulse is 72 and the temperature is normal. He has returned to his liquor habit and his cigarette smoking, but he is using both articles very moderately.

The physical examination at this time, almost two years after his attack of paralysis, is as follows: On inside of right leg, in the middle half, there exists a dry, crusted sore, the size of a half dollar. Below this is a scar of his old sore. On the left leg he has a few scars which he says are also due to sores which he has had.

The veins of both legs and thighs are varicose. On the abdomen, especially on the right side, the superficial epigastric is very large and prominent.

There is no ataxia of arms, legs, or chest muscles. The muscular power of leg, arm, and neck muscles is good.

The patellar reflex is exaggerated on both sides. There is no ankle-clonus. The plantar, cremasteric, lower and upper abdominal reflexes are greatly exaggerated.

The deep reflexes of arms and forearms are slightly increased. The masseter reflex is absent. Measurements show no difference between the two sides.

The tactile, temperature, pain, posture, localization, joint, and muscular senses are now normal over all parts of the body, including the external generative organs.

Eyes: Right can only appreciate light and darkness. When a very small boy he had the right eye injured by a lead pencil, and he has never been able to see with this eye since. He presents an opacity of the lens in this eye. When he directs his attention to an object just in front of him, he turns this right eye sharply to the right and uses the outer quadrant.

Left, V. = $\frac{20}{30}$? Fields normal, fundus normal.

Hearing, watch, right, twenty inches; left, three inches. Tuning fork heard better in left ear. Smell equal and normal. Taste normal and equal.

Lungs and heart normal. Liver dullness slightly diminished. No roughening felt on anterior edge of this organ.

Urine of a light amber color, faint urinary odor; specific gravity, 1·024; faintly alkaline in reaction; no albumin; no sugar. Phosphates deposit on heating.

No blue line on the gums.

Our examination to-day shows almost a well man. The examination of his nervous system shows only an array of exaggerated reflexes. It is sometimes of great advantage to study a disease long after it has disappeared. That is our privilege here.

This young man was subjected to the influence of three poisons: alcohol, tobacco, and lead. In addition to these acting causes he was exposed to the influence of cold. For three weeks he suffered with sharp, constant pain in the small of the back, and had numb, tingling feelings in the legs and arms attended with some pain. He became suddenly paralyzed, according to his statement; but from the fact that he had been drinking very freely before his attack he might have had a number of localized paralyses before paralysis became noticeable to him.

In distribution his paralysis was paraplegic. In cause it was apparently toxic.

By paraplegia we mean a symptom, not a disease. Formerly the term was limited to paralysis of the lower and caudal portions of the body, but now we apply the term to a paralysis involving any transverse section of the body. When the upper extremities are involved the term "cervical paraplegia" is applied.

A complete and proper study of paraplegia involves a consideration of many things: the localization of function, of nerves, cord, and brain, the nature of the pathological process producing functional impairment, variations which occur from involvement of different segments, and the study of the symptoms which may follow the pathological cause.

As a symptom, paraplegia forms a centre around which we may class many diseases of the nervous system, most of them of spinal origin, but including some cerebral and peripheral nervous affections.

Seeing this patient after his recovery, and carefully reviewing his history, I believe that he had at the time of his paralysis multiple neuritis with dorso-lumbar myelitis, or a paraplegia of toxic origin.

Paraplegia dependent upon the ingestion of toxic substances is to-day recognized as a primary peripheral neuritis. Formerly it was regarded as a spinal-cord affection. Some discussion is still going on concerning this question. We have many causes for a toxic paraplegia. The poison may be ptomainic, leucomainic, mineral or vegetable. Lead, arsenic, silver, and alcohol are the most frequent causes.

These poisons circulating in the blood act on the peripheral nerves, probably because these nerves are farthest removed from the vital and nutritional energy of those cells of which they are part and from which their vitality is derived. The affection is symmetrical because the nerves of both sides possess the same characteristic behavior to the toxic agent.

With the ingestion of alcohol an exposure to cold often co-operates, as well as insufficient nourishment.

Paraplegia due to toxic agents was formerly thought to depend in every instance upon a disease of the spinal cord, but careful examination of the spinal cord in such cases failed to find disease there, and it was only after modern researches that the trouble was located in the peripheral nerves. It was a great advance in pathology. During this disease our patient had the connective-tissue sheaths of his nerves infiltrated with lymphoid cells, leucocytes; the blood-vessels of the nerves were dilated, the myelin of the nerve fibres was compressed; the lymphoid cells increased in number, the myelin was further compressed, and the axis cylinders began to suffer. The process of axis-cylinder destruction can be summed up in the words, "fatty degeneration."

In peripheral nerves the various changes which occur seem to progress from the primary lesion to the periphery. The process seems to be one of slow inflammation. From the starting point of the process the changes progress. If the inflammation be severe, the intramuscular nerve endings become involved. This is evidenced by the loss of faradaic irritability in the muscles.

After the process ceases regeneration begins. It is a slow process, and in this man it took over five months for the axis cylinders to be regenerated.

From Ranvier's study the process of regeneration always occurs by the growth of new axis cylinders from the central end of the nerve. These ultimately become covered with myelin. One or more new fibres may spring from each central fibre and these may subdivide. Some of them may achieve functional permanence, some may be removed.

In studying paraplegia we may divide the subject into three main divisions: peripheral, spinal, and intracranial or cerebral.

A cerebral paraplegia must be a rare event. The motor tracts diverge so much in the cerebrum that it would require a large lesion to affect both at the same time. It is possible, however, to have a tumor develop in the longitudinal fissure between the hemispheres, and by pressure or extension involve the motor areas for the legs in each hemisphere. This would produce a symmetrical as well as a bilateral paralysis of the legs, giving us a cerebral paraplegia. Again, intracranial tumors, by pressure upon the crura and pyramidal tracts in the pons and medulla, or in the cerebellum, may produce paraplegia; but such tumors are rare.

Most lesions producing paraplegia are of spinal-cord origin. A myelitis affecting the entire transverse area of the cord, a meningitis or meningo-myelitis, involving the sensory and motor nerve roots, all produce paraplegia, as would compression of the cauda equina within the spinal canal.

Let us consider this case in our study of a spinal paraplegia. The patient was paralyzed in all four extremities. To produce such an effect an organic spinal-cord lesion would have to be located in the cervical region. An acute transverse cervical myelitis would give us such a paraplegia. With such a lesion, however, we would have had, besides the motor, sensory, and trophic disturbances noted in this case, vaso-motor, pupillary, cardiac, and respiratory disturbances, with painful rigidity of the cervical muscles. None of these disturbances were reported. The fact that the patient so perfectly recovered is opposed to such a diagnosis.

We can exclude a cervical meningitis, because the patient had no symptoms of such a condition—no lancinating pains, no constrictive bands, no muscular rigidity.

It was certainly not a polio-myelitis, for his complete recovery, and the fact that he has not a single wasted muscle, shows that there was no destruction of the cells of the anterior cornua.

Besides paraplegia of cerebral origin and that due to diseases of the spinal cord, we have those of peripheral origin. This is our multiple neuritis. It is characterized by paralysis of motion and sensation involving all of the extremities. It is a disease attended with pain, hyperæsthesia, tenderness of the nerve trunks to pressure, trophic changes in the muscles producing the reaction of degeneration, œdema of the extremities—all unattended with visceral disturbance or a sense of a constrictive band.

Of the functional diseases producing paraplegia, we have hysterical paraplegia, paraplegia dependent upon idea, and malarial or intermittent paraplegia.

With multiple neuritis we frequently have some involvement of the cord. In fact, in this disease interference with the functions of the bladder and bowel may be regarded as evidence that the morbid changes are not limited to the nerves, but involve the spinal cord itself. In our patient, with all the symptoms of multiple neuritis, we had a disturbance of both the bladder and bowel. In many alcoholic cases of multiple neuritis chronic myelitis in irregular disseminated areas is the chief change found in the cord. In this patient I believe the change to have been a limited meningo myelitis of rather an acute character. The rapidity of its onset and the pain in the back cause me to so regard it. His present increased knee-jerks indicate that the process was most intense above the origin of the second, third, and fourth lumbar nerves.

Distinguishing his trouble from hysterical paraplegia requires much care. We have, however, the following reasons for believing it organic: The prominent acting cause, the fact that the patient is of a very phlegmatic disposition, that he had with his trouble trophic disturbances of bladder and bowel, and that he had no sudden variations in the intensity and distribution of the paralysis. Hysterical paraplegia can not be absolutely excluded at this date, but it probably was not a functional affair.

The consideration of spinal paraplegia as a whole is an interesting study and involves the localizing of the cord lesion. This localization is not difficult if the topographical anatomy of the nervous system is well known. If we had some compression of the cauda equina within the spinal canal we would have a paraplegia, but with this we should have many of the phenomena observed in multiple neuritis —motor, sensory, and trophic disturbances in the part supplied by the nerves involved.

We also have motor, sensory, and trophic disturbances when the lesion is in the spinal cord. Such a lesion must involve both motor and sensory tracts, and not only these, but the anterior cornua in the cervical and lumbar enlargements, for lesions between these enlargements do not produce the trophic disturbances as muscular atrophy, although voluntary power and sensation may be lost. An example of this form of paraplegia is seen in transverse dorsal myelitis.

We can conceive of a paraplegia unaccompanied by loss of sensation. In such a case the meningitis or myelitis present remains limited to the anterior portion of the cord or to the anterior horns, and the sensory tracts escape implication. Such a process affecting the cervical enlargement of the cord might produce paralysis of both arms and leave the lower extremities free. They would remain so as long as the inflammatory state did not extend deeply enough to involve the pyramidal tracts in the lateral columns. When it did, the lower extremities would be paralyzed, but their sensation would be normal, and they would present no muscular atrophy. Even if the cervical enlargement presented a transverse lesion, there would be no degenerative atrophy in the lower extremities.

Lesions low down in the cord interfere with the functions of the bladder, the rectum, and the sexual and vasomotor apparatus, and this serves as an aid to localization. The bladder and rectum have two sets of muscles opposed to each other in action: the detrusors, which expel the excretions, and the sphincters, which oppose expulsion. These muscles are controlled by centres in the spinal cord in the lumbar region somewhere between the origin of the second and fifth sacral nerves. A reflex arc is established through sensory fibres in the mucous membrane and muscles of the organs spoken of. The local nervous apparatus in the walls of the bladder and bowel probably constitute a reflex apparatus between their mucous membrane and the subjacent muscular, glandular, and vascular parts.

A certain amount of control is had over the opposing muscles of the bladder and bowel. Through the posterior columns of the cord there are sensory connections with the brain, and through the pyramidal tracts probably there is the voluntary path. As our patient had retention of urine early in his trouble let us follow up its significance.

When a lesion above the spinal centre cuts off the sensory impression from these organs to the brain, there is no consciousness of the necessity of micturition and retention results. If the pyramidal tracts are destroyed, voluntary impressions are interrupted, and then the patient is conscious of the necessity but has inability to resist the expulsion. Retention results, but the patient is conscious of it. If both paths are cut off, voluntary and unconscious evacuations occur. If the motor centre itself is destroyed, the expulsive power and the power of the sphincters are lost and the retention of the excretion results, except for the mechanical expulsion by the dribbling of urine. The explanation of the bladder symptoms in this case is that the meningitis present about the lumbar cord interfered by irritation alone with the posterior columns, and the patient was not conscious of a full bladder, and hence he had retention. On the subsiding of the inflammation the condition passed away.

His exaggerated reflexes to-day may depend upon some remnant of his myelitis, but they are more probably dependent upon his present habits.

A chronic myelitis is very apt to develop in this patient and to cause him serious trouble.

MELANCHOLIA,

*WITH REPORTS OF CASES.**

By FRANK HALLECK STEPHENSON, M.D.,

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In presenting this paper I shall give the histories of two or three cases of melancholia of the simple variety, with a brief *résumé* of the subject in general, also calling your attention to the similarity of these milder cases to some of the more exaggerated cases of neurasthenia. The border line is often difficult to discern, but the frequency of suicides and homicides indicates plainly the necessity of knowing and the danger of not being able to recognize these border-line cases or those which show very little mental change and giving timely warning to friends of impending danger to life. Also, it is imperative that we diagnosticate these changes early, so that proper treatment may be employed while a cure can be effected and our patients thus be saved from ending their lives in our private or State hospitals.

Melancholia belongs to the class of functional mental diseases or psychoneuroses. These functional neuroses when not cured terminate in chronic insanity or dementia. In this form of insanity there are profound melancholy and lessened cerebral reflexes, attended with great mental distress and often suicidal impulses. The misery is unreasonable either in relation to its apparent cause or in the form it assumes, the mental pain, of course, often depending upon physical changes and not directly on the environment. Melancholia may be a complete process in itself, differing greatly in its aspects, or it may be one stage in a mental disorder, ushering in or following mania or general paresis, or it may be one stage of circular insanity.

By the degree or manner in which the depression presents itself we may recognize the classification. The one given by Savage, of Bethlehem Royal Hospital, London, I adopted while studying in that institution, and find it very acceptable, although those given by our American writers differ but little—viz.:

1. Simple melancholia.
2. Active, or melancholia agitata.
3. Passive, or hallucinatory melancholia.
4. Melancholy with stupor, or melancholia attonita.

The patients, except in the milder class, present an anxious expression, readily recognized by an experienced observer. They are said to be the most miserable of all lunatics, appearing often, according to Savage, "as if crystallized from a saturated solution of grief." Others appear so mindless that they are mistaken for subjects of dementia, and present a bodily and mental aspect which is unmistakable. The physical symptoms develop slowly as a result of general disordered nutrition from gastro-intestinal affections; from severe losses of blood, as after parturition and the menopause or a surgical operation; from prolonged lactation, severe neuralgias, frequent pregnancies, excesses, pelvic and febrile diseases, nephritis, and *la grippe.* The great strain of overwork, both mental and physical, and the emotions, are probably the most frequent causes. Menstruation is usually absent. Insomnia of a very obstinate character and varying in the different forms of melancholia demands attention. With some it is very light, unrefreshing sleep, while others are very restless and uneasy, as in the agitated or active melancholia. In the passive form they lie quietly, but unless under the influence of drugs are rarely found asleep. In this latter form they get some rest, therefore they do not wear themselves out so soon. The sense perceptions are often dull and react very slowly. This may be explained partly by the abstraction of attention, the patient's mind being occupied along one line, making it difficult to attract it in another; but the hallucinations and illusions are probably the chief causes of the persecutions of sense. Pleasurable sensations can not enter the cerebral cortex, therefore pleasant sights or sounds produce discord, failing to arouse a laugh or rarely a smile in the more marked cases. The milder cases of simple melancholia may be almost indistinguishable from severe depression of spirits.

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* Read before the Third District Branch of the New York State Medical Association, and before the Syracuse Academy of Medicine.

The memory and reasoning faculties are good, except so far as the mental distress changes all sensations into painful ones. They quite early have forebodings and discouragements, become irritable, lose interest in home and friends, and grow careless in appearance. Some patients complain of præcordial pain, and such persons require careful treatment and watching. The peculiar wiry or creeping sensation or ache in the occipital or post-cervical region or down the spine is a characteristic. This latter symptom, combined with obstinate insomnia and melancholy with suicidal tendencies, forms the most prominent diagnostic feature. Many attribute their mental change to some of the physical symptoms already enumerated, while others are unable to account for their condition except that they have committed some act against God or their families which is unpardonable, but the exact sin is usually unexplainable. These thoughts take complete possession of them, and in the more severe cases they think of nothing else; they walk from place to place, wringing their hands, constantly revealing their morbid fears. The slighter the melancholia, the less the mental distress and the less tendency to suicide; but such patients can not be trusted, because of sudden impulses, and, strange to say, the mild cases are those in which the most deliberate and carefully conducted plans are laid. Under proper treatment these suicidal tendencies soon disappear. The illusions and hallucinations of simple melancholia are rather infrequent, and when they do occur they continue but a brief time. The memory remains good for past events and throughout the disease. They see the absurdity of another patient's delusions, but that does not lessen their belief in their own persecutions and shortcomings. One of my own cases now under treatment, which I will report later, well exemplifies this statement. The duration of this form of melancholia varies from three or four months to a year, and longer in the severe cases occurring among elderly people and those physically wrecked.

Melancholia agitata, or active melancholia, occurs more often in middle-aged people, and presents an exaggeration of the symptoms already given, with groans, wringing of the hands, great restlessness, and exclamations of agony. They pull their hair and strike, the delusions shifting according to their surroundings. They do not often commit suicide.

Hallucinatory melancholia, besides hallucinations, presents illusions and great mental distress. Connected with the egotistical and self-conscious side are the ideas of moral and physical perversion, being unnatural, ruined, without love, etc., their suicidal tendencies arising from different causes condemnatory in nature. Hallucinations are, of course, most common in this form of mental disorder. Subjective impressions cause half of the dread—horrors and suspicions, voices heard by night and day, threatening, accusing, and vilifying, keeping the patient constantly on the rack. Next to hallucinations of sight and hearing are those of common sensibility, causing the many sensations called magnetism, electricity, spiritual communion, etc.

The fourth and last class is stuporous melancholia, the name suggesting the condition. The patient sits mute, motionless, and almost expressionless, rarely speaking, and appearing mentally confused when addressed. They suffer great mental distress, resist efforts at change of position made for their comfort, also dressing and feeding; they are cyanosed and cold; the secretions are diminished; nutritive and vascular disturbances are present, also feeble pulse, œdema, and loss of flesh. In one case which I saw in Bethlehem Hospital the patient would sit day in and day out on the front edge of his chair in the most uncomfortable manner, with his head hanging down. He rarely moved except on compulsion, and then would remain just as he was placed, making no attempt to locate himself comfortably. Recovery is very slow in these cases, and they frequently pass into chronic dementia. In the last two forms of melancholia the memory is impaired during the more serious part of the disease.

The diagnosis of melancholia at the onset is usually rather obscure, especially in mild cases, also in a mild onset of the severe forms. The three prominent symptoms, which are grouped and enlarged upon by Professor Landon Carter Gray, of New York, I consider of vast importance in making a diagnosis. Some able observers do not wholly accept this grouping. When I have failed in meeting with one or more of these three diagnostic symptoms—the obstinate insomnia, post-occipital or post-cervical ache, and peculiar facies—I often think of the statement I heard the celebrated Professor Gowers make to a class of medical men in the wards of the London Hospital for the Paralyzed and Epileptic. It was this: "There is no usual symptom of any disease which may not be absent, but the value of the presence of prominent symptoms is of vast importance;

but the absence of a prominent symptom is not conclusive of negative or positive diagnosis." The frequent sudden onset of melancholia after a shock or any great and sudden emotion is a characteristic of the disease. The physical symptoms in the early stages of neurasthenia and melancholia are often very similar. In neurasthenia the headache and spinal ache or tenderness are very different; the insomnia is of a lesser degree, and we do not observe the peculiar facies found in melancholia. We do not meet with the downcast suspicions nor the illusions and hallucinations. Still, in the early stages our cases must be studied very cautiously, and other members of the patient's family should be consulted privately regarding special symptoms of despondency, threats, etc. Extreme and prolonged sadness following the death of a near relative, but simulating melancholia, is in a measure relieved by weeping, though the depression may continue for some time, but with none of the characteristic symptoms of melancholia. While hysteria may simulate melancholia closely, it is only for a time, as positive developments soon clear up the diagnosis.

Marked stupor, with cataleptic symptoms, make easy the diagnosis of catatonia, which in its early stages resembles melancholia.

In circular insanity the melancholia, then the mania, are followed by a stage of sanity; then the mental changes recur and we have our diagnosis made, though early we may think we have only to deal with a case of melancholia of the simple variety. Gross brain disease is often accompanied by depression of so severe a nature as to make a diagnosis of melancholia look reasonable. I recently observed such a patient in the person of a physician who was suffering from general weakness, melancholia, and inability to apply himself mentally. Arteritis was well marked, and death resulted from cerebral hæmorrhage. The arteritis was noticeable for only a very few weeks previous to death, and was of so slight a degree that Dr. Seguin, who saw the patient with me and concurred in my diagnosis, did not apprehend a near fatal termination.

Another patient was recently under my care suffering from symptoms of melancholia which alternated with outbursts of passion. Mitral obstruction accompanied by hypertrophy and marked œdema soon terminated her life.

General paresis and dementia presenting their diagnostic symptoms are usually easily recognized, the tremor, hesitating and uncertain speech, unequal pupils, and overaction of the facial muscles marking paresis. The prognosis is good in fully sixty per cent. of the cases of simple melancholia, also of the milder cases of hallucinatory melancholia. In the active or agitated form and in stuporous melancholia the outlook is not so favorable.

Treatment and Management.—The simple melancholiacs can be best cared for at home if a good trained nurse can be employed and sufficient room obtained for complete isolation from the family—necessities indispensable because of the high degree of nervous excitability or instability of these patients, which often forbid family intercourse. The same applies to the care of hallucinatory melancholia and mild cases of melancholia agitata; but in the severer cases, and those of stuporous melancholia, the patients are best cared for in institutions, unless two nurses can be employed in order that some one may be in constant attendance. The general health requires attention in the greater number of cases, and nervous excitability should be allayed. Women are worse at the menstrual period. I therefore keep them in bed all that is possible during that time and increase their quieting remedies. Large amounts of food must be taken, the Weir Mitchell stuffing plan being a good guide. It combats the anæmia and physical prostration which are so often the cause of the disease. Operations on the pelvic organs are sometimes productive of good, having a beneficial effect on the mind, even if the operation is slight and unnecessary. Such operations are best performed during the period of convalescence. The appetite should be encouraged and constipation relieved. This is often a very troublesome symptom and requires constant attention, otherwise it appears to increase the depression. The aloetic extracts and mineral waters usually are of great use in this condition, hydrochloric acid and pancreatin greatly aiding digestion. Moderate out-of-door exercise, but not sufficient to produce fatigue, must be insisted upon. In aggravated cases the stomach tube has to be employed for alimentation and medication; the hypodermic syringe has also to be resorted to. For the direct treatment of the melancholia, our sheet anchor is opium: the aqueous extract in eighth-of-a-grain doses three or four times daily, varying according to the condition of our patient. Morphine I do not employ, as it appears to excite these patients, also to constipate them. In one case where opium could not be taken, I employed svapnia very successfully. To overcome restlessness, the bromides, preferably bromide of sodium, and tepid bathing are recommended. For the insomnia, sulphonal and trional in large doses are in most cases very acceptable. I frequently combine them with the bromide. Chloralamine, twelve- to twenty-grain doses, and chloral hydrate, ten-grain doses, I have employed when there were no heart complications. For the post cervical ache, phenacetine in five-grain doses, also galvanism, two to three milliampères two or three times a week, produce excellent results. As these patients improve I discontinue treatment very gradually and guard them carefully from overwork or excitement. Relapses are of frequent occurrence and require prompt treatment, as they are controlled with difficulty.

CASE I.—Kate K., aged thirty years, unmarried; occupation, housekeeper at home. She was physically broken down; there was a cessation of the menses, with severe cervical aches, marked insomnia, great fear and foreboding. She was in an agitated state and feared the approach of any one. Under the treatment and management heretofore mentioned, she recovered in eight months and for two years has remained well.

CASE II.—Mrs. B., widow, aged forty years. She was a large, fleshy woman, and presented only mental symptoms; no physical ailments were apparent. She had a babe ten months of age which she was nursing, when she received news of her husband's death by drowning. Her flow of milk ceased and she complained of being in a constant state of alarm after her husband's death; said she could not sleep, had fears of going crazy, and "felt like ending the whole matter," meaning her life. She had a wiry, strange feeling in the occipital region and presented the melancholiac facies. She also complained of inability to think. She was carefully guarded by her family, who were informed of her mental state. The following prescription—bromide of sodium and opium, an eighth of a grain—was given after meals, with sulphonal at retiring and galvanism for the post-cervical ache. She made a good recovery.

Case III.—Miss C. presents the following history: After a long period of overtaxation, she became exhausted, anæmic, restless at night, fretful, and depressed. She was under general medical supervision but without improvement. In November she was shocked by the sudden death of her sister-in-law who left six young children, and the duty of caring for them and her brother's home devolved upon her. During the period of sadness she never shed a tear and appeared unnaturally firm and buried in deep thought. In a few days it was discovered that her mind was unbalanced. She felt herself unfitted for the duties before her and looked upon her life as an unpardonable failure. She thought herself dead to the world though living in it; her fears increased, and she became hopeless of the future. She attempted suicide, but was thwarted and placed in an institution; but the contact with other lunatics was depressing and she was brought home after six months' stay, not improved. I treated her according to the methods above suggested. An experienced trained nurse was in constant attendance. After a few months menstruation returned. She slept well without remedies and was cheerful and companionable. She now presents no symptoms of melancholia. She is lightly employed, and all excitement and fatigue are avoided.

The outlook is very encouraging, and more so, I think, amid pleasant home surroundings than in an institution where unpleasant sights and sounds produce anxiety, where the patient finds herself under lock and key, among strangers, detained often against her will, associating only with lunatics of various degrees of intelligence and refinement. These influences must necessarily irritate and delay convalescence, and I strenuously urge treating all such cases at home, under the care of a competent physician and a nurse in whom we can place implicit confidence, where our patients will do themselves and others no harm.

DUAL ACTION OF THE BRAIN.

By SAMUEL B. LYON, M. D.,
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Whether the brain is an organ one half of which is inactive, taking no part in the production of ideas, emotions, and purposive actions, or whether it is a duplex machine, its halves working ordinarily in harmony and for a common purpose, is a most interesting question, and one which is hardly yet definitely settled. Most of us accept the dicta that only the left hemisphere does much thinking, the other being passive and receptive, and perhaps doing occasional vicarious work when the left half has become incapacitated. The participation of both halves of the brain in other than receptive and reflex phenomena has, however, been claimed as a fact by some authors, and certain peculiarities occasionally noted in insane persons give color to the belief that, to a limited extent, both halves may work together as a rule, and on the other hand may get out of harmony with each other, in exceptional cases, as in mental derangements.

Among the insane there sometimes occur cases in which the two sides of the character appear to be so diametrically opposed that it is hard to believe that it is the same individual who appears so differently at different times. There occur alternate states of amiability and intentional personal violence, the latter not being due to persecutory delusions. Delicacy and refinement alternate with most filthy actions and most obscene language. The possession of one of these moods appears incompatible with the actions in the other. We might almost believe that a devilish spirit, if not a personal devil, had entered for the time into a struggle for the possession of a naturally estimable soul. Antagonistic sides in the character, but shown to a less marked degree, are not very uncommon. The ugliness and violence, after a fit, of some ordinarily amiable epileptics; the suspicion and occasional violence in the morning, alternating with placidity and friendliness in the latter part of the day, which occur in some of the reasoning insane, with sexual and other hallucinations, seem like the working at cross purposes of two forces, rather than the disordered actions of one only.

Dr. Lewis C. Bruce, in the spring number of *Brain*, reports a case of dual brain action. His patient exemplified double consciousness: while in one state he was out of the other, and in one state had no remembrance of his other life. With one state he was right-handed, with the other left-handed. In one he spoke English, in the other imperfect Welsh. In one, his most nearly natural condition, his pulse was strong and full; in the other, weak, with low arterial tension. The conclusion of Dr. Bruce is that in his case the cerebral hemispheres were capable of individual mental action, and that the mentally active cerebrum, for the time being, had a preponderating influence over the control of the motor functions, the patient living two separate existences during the two stages through which he passed; the mental impressions received during each of these separate existences being recorded in one cerebral hemisphere only.

"If this is not so," he says, "how can one account for the patient's ignorance of events which have happened to him in the Welsh stage when he passes into the English condition? Or his suspicion and distrust of attendants and doctors, ignorance of familiar and much-coveted objects, as money and tobacco, when in the Welsh stage; whereas in the English stage he recognizes and is very friendly with the staff, while the sight of money or tobacco is sufficient to bring him running the length of the ward.

"A comparison of the mental power of either cerebral hemisphere places the right at a much lower level than the left. Is this due to the unequal ravages of disease or to the unequal development of education?

"Judging this case by its own characteristic symptoms, one inclines to the belief that even in health each cerebrum must have acted independently and received external impressions separately; that on the advent of mental disease each cerebral hemisphere still maintained its individuality, the left exhibiting symptoms of mania, the right those of melancholia, and that the disease has advanced more rapidly in the right brain, which now exhibits symptoms of dementia."

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* Read before the American Neurological Association, June, 1895.

The possibility of an independent action of the two sides of the brain is not a new supposition. Professor M. J. Luys had a most interesting series of articles on this subject in *L'Encéphale* in 1888, in which he makes the following statements:

"A great number of transitory and fugitive psychopathic conditions have no other internal mechanism than a disordered action of the two cerebral lobes, each acting singly in its own sphere of activity, and affording thus the explanation of those cases of lucidity, coincident with delirium, and of those cases in which the affected are compelled to do wrong, and at the same time are conscious of their deviation from their normal condition."

One is able to understand what profound perturbation may be thrown into the harmony of the cerebral function by certain morbid stimulations which act on one cerebral lobe while the other remains unaffected.

The individual thus affected finds himself divided into two distinct individualities.

Supposing that the lobe which remains healthy continues its normal life, he is conscious of his situation, torn by the opposing forces which are struggling within him and of the influence which is compelling him to do that which he does not wish to do. It is on account of this internal disaccord that these patients, out of equilibrium, so to speak, act in the manner that they do, like one with tetanus, who realizes that his members are successively convulsed, but who is not able to resist their terrible grasp.

These curious manifestations of mental life, which, considered intrinsically, indicate a profound trouble already present in the equilibration of the functions of the brain, have till now been unperceived by the greater number of observers for want of indications sufficiently precise to demonstrate their existence. And if we insist to-day on their existence and their symptomatological value, it is to show that they constitute fixed symptoms—manifestations *sui generis*, which it is fair to infer have a basis in physical phenomena.

It is not the first time that the theory of a division of the mental activity into two parts has been advanced in psychopathic speculations. It has already presented itself in the minds of certain authors, who, however, considering it a doubtful point, and not being able to make it harmonize with the normal cerebral activity as generally accepted, have contented themselves by advancing an hypothesis, more than a scientific theory, which harmonizes with the regular phenomena of cerebral physiology.

Thus, in 1864, Dr. Follet, of the Asylum of St. Athanasia near Quimper, arrived at the conclusion, from his numerous microscopic researches, that at least among the epileptics there was an inequality of weight between the two cerebral hemispheres, and he formulated ideas on the subject of the evolution of insanity in insisting on the rupture of the equilibrium of the nervous currents in the cerebral mechanism.*

Jaffa also directed his researches in this direction, and has reported a very curious case of a patient who felt himself to be *double*, and at whose autopsy there was found a decided inequality of the two hemispheres.

This is the résumé of Jaffa's case: "A man, fifty-three years of age, a soldier, abandoned to the abuse of alcohol, having received many blows upon his head, became gradually insane. In speaking, he used the pronoun 'we': 'We go,' 'We have walked much.' He said that he spoke thus because there was some one with him. At the table he said, 'I am seated, but the other is not.' He would run, and when asked why he did so would reply that he would prefer to rest quiet, but that the other one forced him to run, although he held him back by his clothes. One day he attempted to strangle a child, saying it was not he who did it but the other. Finally he attempted suicide in order to kill the other one, etc. Dementia succeeded in due course.

"The autopsy revealed a considerable difference between the two halves of the brain; the atrophy was principally on the left side. It is evident that the unilateral seat of the lesions had been, if not the only, at least the essential cause of his delirium of a double personality; the individual was different on each side and felt himself to be two persons."

Let us see now upon what proof this theory of the division of the cerebral activity may be reasonably placed in the study of psychopathics?

We have to begin with a curious anatomical fact to notice: 1. The normal deviation in weight between the lobes of the brain, which at most reaches five or six grammes, sometimes seven, to the advantage of the left lobe, is reversed in the brains of the insane. It is the right lobe which has become the heavier, and has absorbed in itself the vigor and nutritive activity of the brain.

This simple fact indicates at the outset a defect in distribution of the nervous matter, a reversal of the normal conditions, and consequently a defect of equilibrium between the dynamic power which each lobe is capable of exerting.

"Upon an abstract of twenty-eight cases of the brains of insane persons which I (Professor Luys) have myself observed and weighed as exactly as possible, I have found the difference in weight between the left and right lobe, which is not more in the normal state than five or six grammes, increase, without any destructive lesion, to eighteen, twenty-five, thirty, and forty grammes. In a paralytic whose brain I recently examined, the left lobe weighed four hundred and sixty-eight grammes and the right four hundred and ninety-eight—a curious result, and one which shows us in typical fashion how large a part the disturbance of the equilibrium of the general cerebral function has to do with insanity." †

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* *Annales médico-psychologiques*, 1854–1866.

† Follet has shown, as we have said, principally among the epileptics, the inequality of the weight of the cerebral lobes; he has found

Finally, there is another point not less significant brought out by these researches, which is, that while in the normal state it is the left lobe which weighs the more, according to the proportions which we have indicated, in the pathological series in twenty-nine cases, in nineteen cases the preponderance belonged to the right lobe.

These unexpected conclusions, if they are confirmed by further researches, will cause us to believe that in the morbid process of insanity the act of nutrition is guided in an opposite direction to that in a sane man in favor of the right hemisphere. It is this which takes to itself the nutritive juices, which augments its mass, which develops in an isolated manner, and becomes thus the instrument of madness.

Among a series of reasoning lunatics, and among expansive hypochondriacs also lucid, this unilateral lesion has presented itself many times in a most significant manner.

We may say then that there exist patent, undeniable facts from which we can construct a typical class of troubles of the mental faculties characterized by systematized delusions coexisting with lucidity, in which we can establish at the same time the unequal participation of the mental apparatus, one cerebral lobe being locally hypertrophied and the other in a normal condition.

If there are cases sufficiently clear in which one may, to a certain extent, see and touch with the finger the lesions which play an active rôle in the loss of equilibrium of the faculties, there exist on the other hand series of clinical facts in which we are not permitted to go so far, and in which interpretation can only be made by simple induction; a legitimate induction, it is true, from demonstrated facts, but still an induction, seeing it is not capable of demonstration.

How, indeed, shall we explain otherwise than by a loss of equilibrium of the brain, and deviation being principally in one cerebral lobe, the conceptions of certain patients, who explain their sensations and give a sincere account of their physical troubles with which they suffer? They do not voluntarily invent the special vocabulary with which they explain their feelings.*

Having referred at considerable length to the opinion of Professor Luys and Dr. Follet, quoted by him, and the case of Dr. Bruce, recently published, I will submit a case from the records of Bloomingdale, in which the possibility of a dual action of the brain seems to be borne out by her strongly contrasting conduct and language, which were not separate states of consciousness, but opposing conditions present at the same moment.

Miss —— was admitted to Bloomingdale Asylum, December 7, 1888, in her third attack of insanity. Her age was twenty-three years. Her first attack had occurred four years earlier (age nineteen years), lasting three months; the second attack two years previous, lasting three months, and the third attack, for which she was brought to Bloomingdale, had lasted four months when she was admitted. Her menses have been suppressed for six months, and her present attack began by her acting queerly, taking to her bed, talking incoherently, and becoming increasingly noisy and excited. She had had an aunt and two cousins insane, and two aunts consumptive. She was naturally of a modest disposition, with a good intellect and more than average education. Her case pursued a course of increasing violence and excitement, at the height of which her actions were most violent, destructive, filthy, abusive, and insulting to those about her. It is recorded in her history, however, that she has no delusions, and very little intellectual disturbance. The first entry in her case records that she was admitted in an excited state, singing, striking, and biting. Her feet were confined to some extent by mechanical appliances. The next day she attacked several of her fellow patients, as well as her attendants, meantime singing and seeming to be in the best of spirits. At the same time she acknowledges that she is very bad, but again she glories in being so, and says the best thing she has done since she came here was to bite a patient. It requires five attendants to dress and undress her. She never loses an opportunity to bite or strike. At the same time she talks rationally about the past, says she would be delighted to play lawn tennis, etc. One entry says: "Was visited by her father and sister, and talked very nicely to them. Showed that she knew about the recent nomination in Chicago. When they left she spit at them and has been disorderly since." Said to-day that she regretted being so bad, but could not help it. Would not talk freely in English, but appeared delighted to speak in German. Promises to make a great effort to restrain herself. Has bitten, pinched, and kicked her attendant until the latter is marked all over her body. She is aware of everything that transpires about her, is a very close observer, and her memory is excellent. Told her father that she considered herself a most difficult patient to get along with. Spoke highly of the kindness of the attendants, and begged her father to bring presents for all of her friends here. During the time she was speaking in this rational manner she was held by two attendants, whom she endeavored to bite and kick at short intervals. She seems ashamed of her actions, but persists in her efforts to injure, and is unable to resist her malicious impulses. Says she can not help it. Remembers everything that transpires, and converses not only rationally, but in a very entertaining manner.

These notes convey some idea of the condition of this patient, who was naturally of an extremely amiable, gentle, refined, and almost religious character, but during her attack of insanity had an irresistible impulse to do everything contrary to her ordinary nature; and with this impulse, which she exercised freely, she was apparently filled with regret and shame that she was doing such things. While in the very act of trying to bite and kick and spit upon people, she would express the greatest regret, and apologize with apparent sincerity for her actions.

The case is interesting for two considerations: first, because of the dual action of mind; and second, because an ovariotomy, performed in January, 1893, has, up to the present time, entirely removed all her insane manifestations, while for nine years preceding the operation she had attacks as often as five times, her periods of insanity becoming longer and her lucid intervals shorter.

If it were possible for two minds to inhabit one body,

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differences as great as fifteen to two hundred and fifty grammes. The same researches have been verified and confirmed by his successor, Dr. Baume, in the same asylum, who has shown that among epileptics an average difference of weight may reach forty grammes. (Baume, *Annales médico-psychologiques*, 1862, p. 427.)

* Étude sur le doublement des opérations cérébrales. M. J. Luys, *L'Encéphale*, 1888.

one of which was by natural disposition, education, and habit refined and gentle in all its tendencies, and the other absolutely lacking in all these qualities, and heartless and cruel to a degree, this patient seemed to possess these two distinct individualities at the same moment. I have frequently witnessed the conflict going on between these two sides of her character, and while she was, in her actions, as ugly and disagreeable as one could possibly be, her language and the expression of her countenance belonged to the refined side of her nature, and were most attractive and interesting.

The facts of double consciousness, of the changed disposition of the epileptic after her fits, and of the opposing impulses in such cases of insanity as I have quoted, are hard to explain on any theory. It is not, perhaps, a greater strain on our credulity to believe that two halves of an instrument, ordinarily acting in harmony, may sometimes get out of equilibrium, than it is to believe that an instrument normally acting in certain lines suddenly changes its nature and product.

Without expressing an opinion, I submit the case, hoping for further light on a very interesting question of the *modus operandi* of the mind.

DEAFNESS: WHAT ARE WE DOING TO PREVENT IT?*

By W. F. STRANGWAYS, M. D.,
FLINT, MICH.

When I received an invitation to take part in the programme for this year I had decided to read a paper on some investigations I am making, but on April 4th, a beautiful little girl, an only daughter, was brought to me to have her deafness cured.

She was ten years old, with a good family history and apparently free from any constitutional taint. Her father, a bright business man, said: "Doctor, we are anxious about our little Mary's deafness, though our family physician has told us to not worry, that at the age of puberty she will grow much better, and that it is better to do nothing more than to keep her in good health; but she is growing worse, so that we have to speak very loudly to make her hear."

In replies to my questions I got the old story so familiar to you all, that when a baby her hearing was good, but when three years old she caught cold and her ears gathered, broke, discharged, and healed, to go through the same process again and again, especially in the fall and spring, until two years ago she had scarlatina, and since then her ears had discharged continuously.

On examination I found discharge, each tympanic membrane perforated, large tonsils, and the nasopharynx filled with adenoids.

As I halted in my examination, the anxious mother asked "how long it would take to cure her girl," and before I replied she had read in my face my prognosis, and in an agonizing tone said: "O doctor, you must not say you can not cure her." I replied I could help her, but she would be more or less deaf all her life.

Little Mary was her only child, the idol of her life, so it was little wonder the fond mother clasped her to her bosom and, amid her sobs, wailed, "O my child, my poor child! must you be deaf forever?"

The scene was exceedingly painful to me and made worse by the father's question, "Could you have prevented the deafness had you treated her when the trouble began?"

I did not wish to increase a lifelong sorrow, nor to leave any censure on the family physician; so I gave an evasive answer, though I felt certain the whole trouble could and should have been prevented.

I called in assistance, little Mary was anæsthetized, and I removed tonsils and adenoids. The after-treatment ordered was Dobell's solution as a wash for nares and nasopharynx, inflation of the ears by Politzer's plan, and syr. ferri iodid. to be taken internally.

In a few days the discharge from the ears ceased and the hearing began to improve, and no doubt little Mary will have serviceable hearing, but it will ever be defective, a lifelong affliction that might have been avoided.

Such cases are not rare and may well raise the question, "What are we doing to prevent deafness?"

For days that mother's wail rang in my ears, and I determined to offer this plea for the more thorough effort to prevent deafness.

I shall not weary you by quoting authorities or introducing histories, but I shall try to hastily outline what my experience teaches me are the predisposing causes of middle-ear deafness, with a hope that I may do what little I can to have these predisposing causes removed before they have caused deafness which too often is beyond our control.

My examination in all cases of deafness includes a careful examination of the nares and naso-pharynx, and I find I can make the following classification of all patients troubled with middle-ear deafness:

1. Children with rhinitis, a moderate amount of adenoids, and recurring earache, but only slight or evanescent deafness.
2. Children with adenoids and marked middle-ear troubles, such as deafness, discharge, etc.
3. Adults with more or less rhinitis and the remains of adenoids, with slowly increasing deafness—a very common kind.
4. Adults without adenoids, but with a sæptal exostosis and post-nasal catarrh, etc.—another very common form.
5. Adults with turgescent or hypertrophic rhinitis and nasopharyngitis, and constantly increasing deafness—not nearly so frequent as any of the other classes.

You will notice this classification depends not on the state of the ears, but the prominent pathological conditions of the nose and nasopharynx. Most authorities agree with me that chronic catarrhal inflammation of the middle ear is an extension of chronic nasopharyngitis, but they fail to point out that, as a rule, chronic nasopharyngitis is due to adenoids or troubles in the nares.

Unless this important point is recognized we will fail to prevent deafness in many of our patients who should have good hearing until they had passed far down the shady slope of life.

You will remember the first class I have referred to is that of children with a small amount of adenoids, rhinitis, and recurring earache, with no marked deafness. Unfortunately, parents and some physicians are inclined to think lightly of ordinary earache in children, because, as a rule, the disease appears to go on to a good recovery; and so it does, so far as childhood and the attending physician are concerned, but such cases are too often the forerunners of deafness in later life.

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* Read before the Michigan State Medical Society, June, 1895.

My third class—*i. e.*, adults with more or less rhinitis and the remains of adenoids, with ever-increasing middle-ear deafness—is but the later appearance of class one. As such children approach puberty the adenoids tend to atrophy and an apparent cure has occurred, but it has only covered up a serious malady that may break forth in later life, perchance when *la grippe*, typhoid fever, or some other serious illness attacks the patient, and we blame the new disease, though it was but the exciting cause, the blast that fanned the trouble into destructive activity.

Most authorities advise the removal of adenoids if they interfere with the breathing space. I agree with them that we must have free breathing space, but I go one step further and say that if there is middle-ear trouble we must remove the adenoids even though but a small amount exists, that we may remove a constant irritant which continually menaces the ears and will sooner or later seriously impair hearing unless removed.

The atrophy which so often takes place at puberty is too often incomplete. It leaves a residue which stands peering into the mouths of the Eustachian canals, and ever and anon an acute coryza sets up afresh the inflammation which has taken its permanent residence in this residue, and this renewed inflammation makes its excursion up the wide-mouthed Eustachian canals toward the middle ear and then recedes to its own domain, to again renew the attack on the slightest provocation, until at last it secures a firm foothold in the canals, producing obstruction and setting up middle-ear troubles.

My plea for the prevention of deafness will fail unless I can advance with force the necessity for removing adenoids, not alone for breathing space but for the cure of nasopharyngitis, the forerunner of middle-ear deafness.

I shall fail in my object unless I urge with force the advisability of carefully examining the nares and post-nasal space of every child subject to earache. Unless we do this we will fail to do our whole duty in preventing deafness.

I now come to class two, where we have adenoid deafness and a discharge from the ears. In the beginning of this paper I gave a short history of little Mary's case, and I stated that I believed I could have prevented her deafness had I seen her earlier, which indicates my opinion in such cases.

Why is it that some children have ear trouble following the exanthemata and others have not, though there is no apparent difference in the systems or physical conditions? My answer is, trouble in the nares and nasopharynx, and that as a rule we will find this trouble is adenoids.

I may be wrong in this. Up to the present I have not been able to collect enough clinical facts to prove it. If I am right, what lifelong misery to thousands can be averted by proper treatment! I place but little stress on strumous causes. Possibly some cases ought to be attributed to them. I can not find language strong enough to condemn the waiting policy in middle-ear troubles of children so often advised by interested but mistaken friends and even by some faithful physicians.

During the last six months I have had many cases of otorrhœa following scarlatina, and every one of them has made a good recovery. With most of them a mild conservative treatment was sufficient, but in others all treatment was useless until I removed the adenoids.

My remarks on the third class have been anticipated by my remarks when discussing the first, but there is one point I wish to make—that is, when we examine a vault and see no apparent elevation, it is not proof that there are no mischievous adenoids to remove. I have had several cases of nasopharyngitis where the vault appeared normal in shape and yet there was adenoid tissue, and I could not cure the chronic inflammation until I curetted away a thin layer of adenoids.

I shall pass on to the fourth class, where we have no adenoids, but a postnasal catarrh that is due to a sæptal exostosis.

If a patient gives me a history of increasing middle-ear deafness and I find no adenoids, I am almost certain to find a sæptal exostosis, which is a constant source of irritation to the nasal passages, and consequently to the nasopharynx and ears.

Recently I have given considerable study to the literature on middle-ear deafness, and have been surprised to find that while most authors are agreed in saying chronic middle-ear inflammation is due to an extension of inflammation from the nasopharynx, there is almost complete silence on the opinion held by most rhinologists that postnasal catarrh is largely the result of trouble in the nares.

We are told to wash out and swab the postnasal space, but nothing is said about curing the trouble farther forward, which must be relieved if we wish to prevent future exacerbations of the middle-ear deafness.

The last division is where we have neither of the two common causes of irritation—adenoids or exostoses—but we have rhinitis and nasopharyngitis. This rhinitis may be turgescent, but is generally hypertrophic. The latter is easily recognized by the uneven, thickened state of the Schneiderian membrane, but turgescent rhinitis may escape detection at the first examination.

As you are aware, turgescent rhinitis is due to a disordered state of the vascular system found in and beneath the mucous membrane of the nose, especially that part of it found on the lower turbinate, the floor of the nose, and the lower part of the sæptum. At times these vessels become enormously distended, to be followed by contraction, and if we examine during moderate contraction we may overlook the trouble, whereas if we had examined an hour earlier we might have found the nares almost occluded, with consequent irritation to the postnares and ears.

As many patients have pathological conditions of the nose that cause them very little distress, it is a mistake to take the patient's denial of nasal trouble. I place stress on disease of the nares being a frequent genesis of middle-ear deafness, for I am convinced many failures to stop the onward progress of this the most common form of deafness are due to neglecting troubles in the nares.

Most of our authorities on diseases of the ear are men past middle life, and consequently received their training before we learned how to treat diseases of the nose, and they still continue the old division of oculists and aurists rather than aurists and rhinologists. These authorities advise us to inflate the ears and swab the postnasal space, and by doing so we help our patient; but, unfortunately, the next fall or spring our patient catches cold and the old trouble grows worse, and we are blamed, for we should have removed the predisposing cause found either in the nares or postnasal space.

Let us prevent and cure nasal and postnasal troubles and we will prevent two thirds of all deafness. This is a sweeping assertion of immense importance, and yet it is unknown to people generally, and the burden of educating them to have prompt and proper treatment for such troubles rests upon the medical profession.

A NEW METHOD FOR THE DETECTION AND ESTIMATION OF SUGAR IN THE URINE.

By ARTHUR R. ELLIOTT, C. M., M. D.,
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AT THE POST-GRADUATE MEDICAL SCHOOL, CHICAGO.

THE tests most commonly used for the detection of sugar in the urine are the copper tests, and of these Fehling's method has hitherto been the most popular with the profession. In common with the others of this class, this method depends for its reaction upon the power which grape sugar possesses of reducing cupric oxide to the state of cuprous oxide, with the formation of a yellowish-red precipitate soluble in ammonia. If sugar is present in the urine in any considerable amount, Fehling's test leaves little to be desired as to reliability. When, however, but a small quantity is present, its method of application renders it liable to faulty reduction and misleading results. In dealing with small quantities of sugar in the urine it is anything but a perfect test. Normal urine contains substances which have a marked effect in reducing copper test solutions. The principal of these are uric acid and creatinin. Dr. George Johnson attributes to the former one quarter and to the latter three quarters of this property. They are constant ingredients of the urine and constitute a fruitful source of error when but slight reduction takes place.

Another occasional cause of faulty reduction of these tests is glycuronic acid. This substance is present in such small quantity in normal urine as to be considered practically absent, but after taking such drugs as chloral hydrate, camphor, and chloroform it may appear in considerable amount. When such is the case it gives rise to a frank reduction, indistinguishable in appearance from that produced by grape sugar.

The large quantity of urine used in the application of Fehling's test renders it especially susceptible to these errors. In applying the test we are directed to add the urine to the boiling test solution until reduction takes place, or until we have added as much urine as we have test solution. The amount of the solution employed is usually one drachm. Such a quantity of normal urine, if it be at all concentrated, will almost invariably give rise to an appreciable reduction, much resembling that due to the presence of small amounts of sugar. It is with urines of high specific gravity that we exercise the greatest care in searching for sugar, and it is in these cases where discrimination is essential that Fehling's method is most misleading. Normal urine is frequently concentrated, of high density, and increased acidity, and in such an event the amount of urine used with this test will contain sufficient creatinin and uric acid to produce a reaction which may, and frequently does, deceive the unwary. If less urine is used the delicacy of the test is impaired. In addition to this serious drawback, the instability of the test solution and its well-known tendency under certain circumstances to undergo spontaneous reduction are other objections to its use. Haines's modification is a considerable improvement over Fehling's in manner of application, but leaves much to be desired in point of delicacy.

The ideal test for sugar will be one that is at once reliable and sensitive, recognizing with certainty minute quantities of sugar in the urine, and one that requires the employment of never more than a few drops of urine in its application. Such a one the following method, devised and employed by myself, has thus far proved to be. With great reliability it combines extreme delicacy, and requires the employment of a minimum quantity of urine.

The formulæ for its preparation and the details of its application are as follows:

Solution No. 1.

Cupric sulphate (C. P.)..........	gr. xxvij;
Glycerin pure..................	ʒ iij;
Distilled water.......	ʒ ijss;
Liquor potassæ...............ad	℥ iv.

Dissolve the cupric sulphate in the glycerin and distilled water. Gentle heat will facilitate the solution. When cold, add the liquor potassæ and mix thoroughly.

Solution No. 2 is a saturated solution of chemically pure tartaric acid in distilled water.

The solutions are quite stable and will keep indefinitely.

Into a test tube pour a drachm of the cupric-oxide solution and gently boil over a spirit flame. Then add two or three drops—not more—of the tartaric-acid solution and boil again. Now add the suspected urine slowly, drop by drop, boiling and shaking the test solution between each drop until reduction takes place, or until eight drops of the urine have been added. If no change follows the addition of this amount of urine, sugar is not present. The end reaction is a yellowish or reddish, or sometimes greenish-gray, deposit of suboxide which is marked and unmistakable. If the solution be stood aside for a few moments the reaction deepens.

Applied in this manner, the test will detect less than one part in a thousand of urine, or one tenth per cent. If sugar be present to any considerable extent, a single drop of urine will promptly develop the reaction. The addition of three drops gives a marked reduction when two grains to the ounce are present, and four drops will detect one grain to the ounce, or one in four hundred and eighty. More than eight drops of urine should never be used with this test, since that amount never fails to give a marked reaction when half a grain or more of sugar to the ounce is present, and smaller traces than this in the urine are of no interest to the practitioner. Greater delicacy may be obtained by the addition of a larger quantity of urine, but by so doing reliability is sacrificed for greater sensitiveness and the especial value of this method is destroyed.

The end reaction developed by the smaller amounts of sugar is a grayish, muddy deposit, easily distinguishable, with disappearance of the blue color of the test solution.

I have adapted this test so that it may be used for the quantitative estimation of sugar. The advantages which characterize it as a qualitative test render it especially applicable for this purpose. Proceed as follows: Take a hundred and thirty-three minims of the cupric-oxide solution in a narrow-necked glass flask and add thereto six drops of the tartaric-acid solution and three drachms of liquor ammoniæ, U. S. P. Mix thoroughly, and add enough distilled water to raise the total volume of the solution to two ounces. The principle of this test is the same as that of Purdy's test and Pavy's ammoniated cupric test, which is that the cuprous oxide formed by the reducing power of the sugar is held in solution by the ammonia, the test solution remaining clear throughout, the end reaction being the complete disappearance of the blue color.

This amount of the solution represents in sugar value a fourth of a grain of grape sugar—that is, it is reduced and decolorized by exactly a fourth of a grain of sugar. Its application is conducted in the same manner as Pavy's and Purdy's methods. The urine is added to the boiling test solution, drop by drop, until the color has entirely disappeared. The number of minims of urine necessary to produce this result is noted on the burette or minim pipette used, and four hundred and eighty, the number of minims in an ounce, is divided by the number of minims so required, and the product divided by four, which gives the number of grains of sugar to the ounce. Instead of this process the urine, before testing, may be diluted with three volumes of distilled water, and four hundred and eighty, divided by the number of minims required to decolorize the test, will give the number of grains to the ounce of urine. Knowing the total amount of urine for the twenty-four hours, it is a simple matter to estimate the total excretion of sugar.

The delicacy of the test results in a singularly clear and transparent end reaction. This result is also partly due to the fact that the solution, being prepared freshly each time, is clearer and gives more positive results than other tests which, notwithstanding their alleged stability, deteriorate to some extent when kept for long periods of time.

The fact that the same solutions are used for estimation as are employed for the detection of sugar constitutes an advantage, as it avoids multiplicity of reagents.

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"DOUBLE" CASTRATION.

The discussion that is going on over Dr. White's very ingenious idea of mitigating the sufferings due to prostatic enlargement by castration furnishes one of the most important features of current medical literature. The observations thus far reported are not sufficient, we think, to settle the question of the efficiency of the operation, and it is not our present purpose to speak of that question, but simply to deprecate an erroneous expression that some of the participants in the discussion have seen fit to make use of—namely, "double" castration, or "complete" castration, as it has also been called. It seems to us that there can be no such thing. What is meant by these terms is, of course, the removal of both testicles as distinguished from that of only one testicle. Either castration is complete or it is not castration at all; to remove one of a man's testicles is not to castrate him. There are no degrees of castration; a man is either castrated completely or not at all. He who has lost one testicle only has no more been castrated than he who has been deprived of one eye or one ear has been rendered incapable of seeing or of hearing. There are some things that can happen only once to a person, and among them is castration.

If writers on White's operation think it an object to distinguish between the removal of one testicle and that of both, we would suggest the use of the terms unilateral and bilateral orchidectomy, and we may add that the sooner some such expressions are substituted for those on which we have remarked the better.

FRANKNESS BETWEEN PHYSICIAN AND PATIENT.

The course generally pursued by physicians of withholding from patients who are dangerously ill or affected with an incurable, though perhaps latent, chronic malady definite information as to their real condition is founded on most creditable motives, chiefly that of saving the patients unnecessary mental distress. Doubtless with some persons and on some occasions, however, it would be well to show the utmost frankness. At all events many persons feel that it would be. A lay correspondent of the *British Medical Journal* puts this feeling very aptly. He admits at the outset that it is not in all cases incumbent on the physician to reveal his suspicions of grave danger, but where a patient is clamorous to know just what is the matter with him and what the probabilities of the case are, he thinks, the physician ought not to give evasive or misleading replies, for the suspense and anxiety that often result from his so doing may be more injurious than a knowledge of the truth would be.

The correspondent proceeds to give some instances to illustrate his meaning. The first is that of a man about town, thirty years old, who fell in an epileptic seizure and cut his head open. His usual physician attended him, and from the patient's account of the occurrence it appeared that he supposed he had tripped over something and been stunned by the fall. The narrator thinks, but he can not be certain, that the doctor had at least some suspicion of the truth; nevertheless, he encouraged the patient in his theory of the fall and gave him no hint as to what had probably been its real cause. The consequence was that the man kept on in his usual course of life and had several dangerous repetitions of his first attack; and yet the doctor continued to mislead him, although he must then have been fully aware of the nature of the trouble. Now, from what the writer knows of the man and the circumstances of the case, he has no hesitation in saying that had he been told at first what his real malady was he would have been able to avert much unnecessary suffering.

In another instance a man, accompanied by two doctors whom he was in the habit of consulting, called on an eminent London specialist about a serious ailment from which he was suffering. After hearing the particulars and examining the patient, the specialist told his two professional brethren privately that the case was a very serious one, and that the patient's ultimate recovery was very doubtful; yet he said to the patient himself that his symptoms were favorable and that he might count on resuming his ordinary work in six months if he took complete rest in the mean time. On this opinion the man built up great hopes, but when the term of six months was up they were shattered, and the correspondent feels sure that this caused him keener disappointment than he would have felt if the truth had been broken to him judiciously at the time of the consultation.

Another evil that the correspondent complains of is that the physician, while concealing the truth from the patient, tells it privately to the nurse, who eventually blurts it out to the patient. "I believe," says the writer, "that ninety-nine doctors out of every hundred have tact enough and skill enough to break the worst news to any ordinary patient as gently as it can be done. I lay stress on this quality in doctors," he adds, "in contradistinction to the relatives' less judicious way of telling the truth." There is much food for reflection in what this writer says, and it is quite probable that such considerations as he sets forth ought often to have more weight than is allowed them. There are few well-meant things more injurious than mistaken kindness.

MINOR PARAGRAPHS.

A NEW SIGN OF DEATH FROM EXPOSURE TO COLD.

In the *Wiener medizinische Blätter* for July 11th there is an abstract of an article published in the *Journal für öffentlicher Hygiene, gerichtlicher und praktischer Medizin* for March, by Dr. S. Wischnewski, who has made post-mortem examinations of forty-four frozen persons. In forty instances he found hæmorrhages on the mucous membrane of the stomach. These hæmorrhages looked like little spots somewhat raised above the surface of the mucous membrane. They were round or oval in shape, of a dusky or blackish color, and reached the size of a pea. They varied in number from five to a hundred in individual cases. In cases where the person had died from some other cause and then the body had been frozen the author did not find these hæmorrhages. The appearance of the hæmorrhages was not affected by the condition of the stomach in regard to being full or empty. By way of test experiments the author froze rats and guinea-pigs and found the same hæmorrhages as in man, but in cats and young dogs frozen to death he did not observe them, but only a general hyperæmia of the gastric mucous membrane. The author considers this sign of medico-legal importance, as significant of death from exposure to cold.

THE STATE OF GEORGIA IN MEDICINE.

There has recently been published in the *Atlanta Medical and Surgical Journal* a notable article entitled The History of Medicine and Surgery in Georgia, by Dr. Luther B. Grandy, of Atlanta. The article does not purport to be exhaustive, but it serves to call to mind the main incidents in the history of medicine in Georgia and the chief achievements of the physicians and surgeons that have practised in the State, from colonial times down to the present day. The record is one that the Georgia profession may indeed be proud of.

INFLUENZA AS A REMEDY.

In the *Centralblatt für innere Medicin* for June 29th, Dr. Berthold Goldberg, of Cologne, records a case of chronic gonorrhœal cystitis the cure of which he attributes to an attack of influenza. He quotes from Lamarque the statement that some forms of albuminuria, especially the intermittent variety, subside as the result of influenza.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 23, 1895:

DISEASES.	Week ending July 16.		Week ending July 23.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	14	6	18	9
Scarlet fever	44	3	38	2
Cerebro-spinal meningitis	4	4	3	2
Measles	170	17	193	18
Diphtheria	192	30	195	28
Small-pox	0	0	0	0
Tuberculosis	133	81	56	111

Death Due to an Injection of Antidiphtheritic Serum.—At a recent meeting of the *Société médicale des hôpitaux*, a report of which is published in the *Mercredi médical* for July 10th, M. Moizard and M. Bouchard reported the case of a child, six years old, who had presented an angina with false membrane, accompanied by fever and malaise. M. Bouchard, who knew that the child had been exposed to diphtheria some time before, thought that the trouble was of a diphtheritic nature, and, before making any bacteriological examination, gave an injection of ten cubic centimetres of serum. From the 2d of May, two days after the onset of the disease, until the 5th the child seemed to improve and the false membrane disappeared. On the 6th he complained of a slight pain in the right shoulder, which, however, disappeared rapidly. On the 8th the temperature rose to 104° F., and there was diarrhœa; but the throat presented no new symptoms and there was no albumin in the urine. On the 10th the temperature was 102°, and an eruption, which assumed a polymorphous and scarlatinous appearance during the evening, was found near the puncture in the left hypochondriac region. At this time a little albumin was found in the urine. On the 11th the eruption was generalized, the fever was high, and the albuminuria persisted; the child had successive attacks of agitation and depression, and vomited incessantly. On the 12th the respiration was irregular and the pulse feeble. The child became comatose after repeated attacks of convulsions and died during the night.

M. Moizard thought that the symptoms in this case could not be attributed to nephritis, as there had been no anæmia and the albumin had appeared late and in small quantities. The bacteriological examination had proved that the angina was not diphtheritic in its nature, and M. Moizard said that the symptoms should be attributed to the serum alone; their nature and their time of appearance corresponded to that which observation had demonstrated, up to the present time, in regard to this subject. The quality of the serum, said M. Moizard, could not be doubted, and the dose was a normal one. In this case he thought it might be a question of an injurious action of the serum on the nervous system, and the question naturally arose as to the expediency of preventive injections, which appeared to be not always harmless, and sometimes fatal. He thought that the injections of serum should depend on the results of a bacteriological examination.

In the same journal there is another article on this subject in which the writer alludes to the case, and says that Professor Proust, who was charged with the investigation of it, thinks that death was due entirely to the serum. There were the absolutely characteristic symptoms of serum injections, he says, and the usual polymorphous eruption.

In this case, says the writer, without doubt it would have been prudent to await the results of a bacteriological examination. Professor Proust, however, thinks that such a line of action might often give rise to serious inconveniences by running the risk of losing valuable time. In doubtful cases M. Proust advises that not more than five cubic centimetres of the serum should be given.

Dr. John B. Murphy, of Chicago, met a number of physicians of New York and other places at a reception given by Dr. Thomas H. Manley on Friday evening, the 19th inst. On the following day he sailed for England to attend the approaching meeting of the British Medical Association.

The City Board of Health.—It is announced that Dr. John T. Nagle has resigned from the office of register of records, and that Dr. Roger S. Tracy has been appointed to succeed him.

The Richmond Academy of Medicine and Surgery.—The special order for the last meeting, on Tuesday evening, the 23d inst., was a discussion on Cholelithiasis, to be opened by Dr. J. W. Henson and Dr. H. H. Levy.

The Index Medicus.—Dr. Frank Whitehill Hinkel, of Buffalo, writes to us that he will be "one of two hundred or more volunteers to contribute not more than twenty-five dollars each to revive the *Index Medicus.*"

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 14 to July 20, 1895:*

Alexander, Charles T., Colonel and Assistant Surgeon General, is granted leave of absence for two months, to take effect on or about July 13, 1895.

Bache, Dallas, Colonel and Assistant Surgeon General and Medical Director, Department of the Platte, is granted leave of absence for one month, with permission to apply for an extension of ten days, to take effect on or about July 20, 1895.

Cabell, Julian M., Captain and Assistant Surgeon, is granted leave of absence for four months on surgeon's certificate of disability.

Corbusier, William H., Captain and Assistant Surgeon, will, in addition to his present duties, take charge of the Medical Supply Depot in New York city during the absence on leave of Alexander, Charles T., Colonel and Assistant Surgeon General.

Polhemus, Adrian S., Captain and Assistant Surgeon, is granted leave of absence for two months, to take effect after his return to his proper station, Fort Douglas, Utah, and at such time thereafter as his services can be spared by his post commander.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Fifteen Days ending July 15, 1895:*

Bailhache, P. H., Surgeon. To assume command of Camp Low Quarantine. July 5, 1895.

Hutton, W. H. H., Surgeon. To report at bureau for temporary duty. July 12, 1895.

Wheeler, W. A., Surgeon. Relieved from command of Camp Low Quarantine. July 5, 1895.

Banks, C. E., Passed Assistant Surgeon. To proceed to Detroit, Mich., on special temporary duty. July 5, 1895.

Goodwin, H. T., Passed Assistant Surgeon. Granted leave of absence for thirty days. July 12, 1895.

Vaughan, G. T., Passed Assistant Surgeon. Granted leave of absence for seven days. July 6, 1895.

Stoner, J. B., Passed Assistant Surgeon. To proceed to Detroit, Mich., for temporary duty. July 12, 1895.

Eager, J. M., Passed Assistant Surgeon. To proceed to Southport, N. C., and assume command of quarantine station. July 6, 1895.

Stewart, W. J. S. Assistant Surgeon. Granted leave of absence for nine days. July 5, 1895.

Wickes, H. W. Assistant Surgeon. Granted leave of absence for twenty-three days. July 5, 1895.

Society Meetings for the Coming Week:

Wednesday, *July 31st:* Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Gloucester, N. J., County Medical Society (quarterly); Middlesex, Mass., North District Medical Society (Lowell).

Thursday, *August 1st:* Society of Physicians of the Village of Canandaigua, N. Y.; Brooklyn Surgical Society; Cuyahoga, Ohio, County Medical Society.

Saturday, *August 3d:* Clinical Society of the New York Post-graduate Medical School and Hospital; Miller's River, Mass., Medical Society.

Births, Marriages, and Deaths.

Married.

Arnold—Harvey.—In Plattsburgh, N. Y., on Thursday, July 18th, Lieutenant Conway Hillyer Arnold, Jr., of the artillery, and Miss Gertrude May Harvey, daughter of Surgeon Philip F. Harvey, of the army.

Brickner—Hays.—In Rochester, N. Y., on Wednesday, July 17th, Dr. Samuel M. Brickner, of New York, and Miss Josephine Hays, of Rochester.

Johnston—Scott.—In Cooperstown, N. Y., on Wednesday, July 3d, Dr. Henry C. Johnston, of New Brighton, N. Y., and Miss Edith Scott, of Cooperstown.

Lewis—Smith.—In New York, on Monday, July 1st, Dr. Norman H. Lewis and Miss Mildred Mary Smith.

Müller—Degenhardt.—In New York, on Sunday, July 14th, Dr. Alfons Müller and Miss Louise Degenhardt.

Died.

Missildine.—In Tryon, N. C., on Wednesday, July 17th, Dr. Oscar Stuart Missildine.

Morton.—In Brooklyn, on Monday, July 22d, Dr. Walter A. Morton, aged thirty-six years.

Schuppert.—In New Orleans, on Tuesday, July 9th, Dr. William E. Schuppert, aged forty-one years.

Tracy.—In Westfield, Mass., on Thursday, July 18th, Dr. Albert F. Tracy.

Letters to the Editor.

REGISTRATION IN THE STATE OF NEW YORK.

State Board of Medical Examiners representing the
Medical Society of the State of New York.
Secretary's Office, 78 West Eighty-Second Street,
New York, *July 18, 1895.*

To the Editor of the New York Medical Journal:

Sir: In view of a quite general misinterpretation of a brief notice of the medical laws of the State of New York which appeared in a recent number of your journal, it might be well to state that any person who has been *legally* registered to practise medicine in any county in the State of New York may continue to practise *in that county* without taking any further steps.

If, however, such practitioner desires to move his practice or part thereof to another county or counties, he must reregister at the county clerk's office of this new territory. In order to so register he must present a transcript of registration from the county in which he originally registered, together with his diploma or license *bearing the seal of the University of the State of New York* (regents). All *licenses* issued by the State contain this seal. To secure for a *diploma* this seal of the University of the State of New York it is necessary to write to the Examinations Department, Regent's Office, Albany, N. Y., for blank forms of application for this purpose. These, properly filled out and attested, should be returned to the regents, together with a transcript of original registration in a county clerk's office in New York State and the M. D. diploma. If all is found satisfactory, the seal of the regents is attached to the diploma, thus making the latter registerable in any and every county of the State on presentation at a county clerk's office and on payment of a fee of twenty-five cents. No fee to the regents.

A diploma granted legally to a graduate of a *registered* medical college (home or foreign) previous to August 1, 1895, may be indorsed by the regents, thus entitling the holder thereof to all the rights and privileges of a license issued after examination, *provided the applicant had matriculated at a New York State medical school before June 5, 1890.* The fee is ten dollars, payable to the regents.

Copies of the law, as amended by the Legislature of 1895, can be obtained on application to the regent's office, Albany, N. Y.

Maurice J. Lewi, M. D.

THE SERUM TREATMENT OF SYPHILIS.

H. M. S. Halcyon, Devonport, England, *June 29, 1895.*

To the Editor of the New York Medical Journal:

Sir: Recent results of the serum treatment of syphilis on the continent lead one to inquire whether the "fortified" serum of a naturally immune animal would be available as a preventive agent against the human disease.

Richet (*Société de biologie*, January 12, 1895) concludes that "microbic serum" can prevent the development of tuberculosis, and he also quotes some satisfactory results after the trial of "immunized" canine serum. Istamanoff (*Presse médicale*, January 12, 1895; review of an article which appeared in *Vratch* for November 24, 1894) gives some particulars of the effects of ordinary ovine serum in sixteen cases, and in a large proportion of his patients the secondary symptoms disappeared; but the author was skeptical as to the curative effect of the injections. Gilbert and Tournier (*Brit. Med. Jour.*, June 1, 1895, *Epitome*) have also tried specific "immunized" serum, but some of their results were contradictory. We must bear in mind the fact that the virus of syphilis is apparently modified by simple admixture with vaccine lymph, which contains pus and blood corpuscles, since, when syphilis is communicated by vaccination, the signs of specific infection are delayed not infrequently (Keber, of Dantzig; Diday). If we introduced the specific virus into the circulation of a naturally immune animal—*e. g.*, the horse or sheep or, better still, the lamb or kid—the poison would doubtless be profoundly modified, attenuated, or destroyed, in the alien blood stream after a given time, and the immunity of these quadrupeds to the human disease might possibly be increased.

My own theory is that this "immunized" alien serum, *minus active micro-organisms and solid corpuscular elements,* might be found to exert a protective influence in the human subject, *without any serious local reaction or after-effects.*

It would be instructive to watch the results of inoculation of equine or ovine blood-serum culture tubes with the following:

1. Mixed human saprophytic organisms from "primary-lesion blood."
2. Secondary syphilitic blood.
3. Plate cultures from "immunized" animals' blood at stated intervals, after the introduction of the virus into the circulation, in order to form an estimate of the microbial strength of the "immunizing agent," and also with a view to ascertaining the fate of the "specific cultures."

Comparisons—control experiments—might also be undertaken. Should this surmise prove correct, a great triumph for preventive medicine might be achieved.

John Duncan Menzies, M. B.,
Royal Navy.

Proceedings of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Ninth Annual Meeting, held in Niagara Falls, on Tuesday and Wednesday, May 28 and 29, 1895.

The President, Dr. L. Bolton Bangs, of New York, in the Chair.

(Continued from vol. lxi, page 827.)

Prostato-myomectomy by the Suprapubic Route.—Dr. John P. Bryson, of St. Louis, read a paper on this subject, and in connection therewith he presented a table giving the details of twenty-seven cases. The author stated that this series had been begun when this method of attacking the prostate was still in its infancy, and the technique far from complete. The ages of the patients had ranged from fifty to seventy-eight years. The mortality for the entire series had been a little over twenty-five per cent., but this did not represent the true death-rate of the operation. Three patients should be excluded from the mortality list, one of whom had died from hæmorrhage from sarcomatous disease of the prostate, and two from renal disease. Eliminating these three, there had been twenty-four cases with four deaths, a mortality of 16·6 per cent. A radical cure had been obtained in thirteen of the cases, as was proved by the absence of residual urine, good rest at night, and a practical cure of the cystitis. In two cases, no benefit whatever appeared to have resulted; these patients had been, respectively, seventy-two and seventy-eight years of age and far advanced in senile degeneration. They had been operated on mainly in the hope of relieving the most distressing symptoms of "prostatism"—namely, frequent and painful urination and inability to get rest or sleep either night or day. Peterson's rectal bag had been used in every case, and in only one instance had there been any symptom of irritation to be attributed to it. In nine cases a median perineal incision had been combined with the suprapubic opening for the purpose of assisting in removing submucous and intramural masses or of securing proper drainage, or for both purposes. In the earlier operations an attempt had been made to close the supravesical wound with sutures, later on to abridge the incision by the same means, with the hope of hastening the closure of the wound. These efforts had been unsuccessful in every instance.

Prostatectomy.—Dr. Eugene Fuller, of New York, read a paper on this subject, the important feature of which was the presentation of a method of operation in these cases by means of which the prostatic obstruction was enucleated. An ordinary suprapubic cystotomy was first performed; then an incision was made through the floor of the bladder; this incision extended from the lower margin of the vesical opening of the urethra backward for about an inch and a half, and was made with rough, serrated-edged scissors, in order to avoid hæmorrhage. The forefinger of one hand was then introduced through this cut, while the other hand exercised counterpressure upon the perinæum, in order to bring the growth well within the reach of the forefinger. By manipulation, the obstruction could gradually be enucleated, the hypertrophied part coming away in one or several pieces. After the enucleation, a perineal incision was made for dependent drainage, the inner end of the drainage-tube being passed into the bladder through the lower vesical incision made for the enucleation. The suprapubic vesical and abdominal incision was then tightly sutured with the exception of a small space for a drainage-tube. The writer stated that he had never experienced trouble from hæmorrhage, either primary or secondary, by this method of enucleation, and felt safe in closing the suprapubic cut. By this method Dr. Fuller maintained that the mortality was reduced and excellent results were obtained. He detailed six successful and successive cases in which he had operated during the past year.

Castration for Prostatic Overgrowth: Observation for Four Months.—Dr. Bryson reported a case. (To be published.)

The Results of Treatment of Hypertrophy of the Prostate.—Dr. J. William White, of Philadelphia, read a paper on this subject in which he gave the following conclusions:

1. The function of the testes, like that of the ovaries, was twofold: the reproduction of the species and the development and preservation of the secondary sexual characteristics of the individual. The need for the exercise of the latter function ceased when full adult life was reached, but it was possible that the activity of the testes and ovaries in this respect did not disappear coincidently, and that hypertrophies in closely allied organs, like the prostate and the uterus, were the result of this misdirected energy. This hypothesis would increase the analogy between the fibro-myomata of the uterus and adeno-fibromata of the prostate, which, from a clinical standpoint, was already very striking, and was further strengthened by the almost identical results of castration in the two conditions.

2. The theoretical observations which had been urged against the operation of castration had been fully negatived by clinical experience, which showed that in a very large proportion of cases (thus far, in approximately 87·2 per cent.) rapid atrophy of the prostatic enlargement followed the operation; there was disappearance or great lessening in degree of long-standing cystitis (fifty-two per cent.), there was more or less return of vesical contractility (sixty-six per cent.), there was an amelioration of the most troublesome symptoms (eighty-three per cent.), and a return to local conditions, not very far removed from normal (46·4 per cent.), might be expected in a considerable number of cases.

3. The deaths had been twenty in a hundred and eleven cases, a percentage of eighteen, but of these there seemed to be thirteen that might fairly be excluded in an attempt to ascertain the legitimate mortality in patients operated upon under surgically favorable conditions—*i. e.*, before the actual onset of uræmia, or before the kidneys had become disorganized by the two factors rarely absent in advanced cases, backward pressure and infection. This would leave a mortality of 7·1 per cent., which would probably be decreased as advancing knowledge permitted of a better selection of cases. It was important to know that even the desperate cases, which made up this series of deaths, fifteen, or seventy-five per cent., had shown improvement of symptoms or shrinkage of the prostate before death ensued.

4. A comparison with other operative procedures seemed to justify the statement that apart from the sentimental objections of aged persons, on the one hand, and the real, entirely natural, and very strong repugnance to the operation felt by younger patients, castration offered a better prospect of permanent return to nearly normal conditions than any other method of treatment did. The relatively greater degree of improvement in successful cases should be considered, as well as the mortality, in comparing the operation with the various forms of prostatotomy and prostatectomy; so, too, should the absence of any risk of permanent fistulæ, perineal

or suprapubic, and the ease and quickness with which the operation could be performed.

5. The evidence as to removal of one testicle was at present contradictory, but there could be no doubt that in some cases it was followed by unilateral atrophy of the prostate, and in two cases at least it had resulted in very marked improvement of symptoms. It was worthy of further investigation.

6. Experiments on dogs had shown in nearly every case in which the vas deferens had been tied and divided on each side, that without much change in the testicles there had been beginning atrophy and considerable loss of weight of the prostate. These experiments needed repetition and confirmation, as the absence of corresponding testicular change seemed to make the results somewhat anomalous. It was possible that the inclusion or severance of small but important nerves might account for the effect on the prostate.

7. Ligation of the vascular constituents of the spermatic cord or of the whole cord produced atrophy of the prostate, but, in the speaker's experiments, only after first causing disorganization of the testes.

Early Obstruction of the Ejaculatory Ducts.—Dr. E. C. Burnett, of St. Louis, reported the following case: The patient had been a man, aged thirty-five years; single; general health good. At the age of five he had been operated on for stone in the bladder, the left lateral lithotomy operation having been performed. The patient stated that his testicles has almost always pained him for a day or so after sexual indulgence. Sexually, he maintained that he was perfectly normal, except that he had never had an emission of semen. The external genitals had been large and well developed. Upon the introduction of an endoscope into the urethra the prostatic portion of the canal had been found to be extraordinarily short, and the veru montanum had been so small as to be barely distinguishable from the surrounding tissue. Palpation *per rectum* for the seminal vesicles had disclosed the fact that they were not appreciable to the touch, and that the prostate was barely definable. The latter was much smaller than that of a boy ten or twelve years of age.

During one of his examinations Dr. Burnett had noticed a scar upon the left side of the perinæum, and upon inquiry as to its cause had been informed of the lithotomy operation which had been performed thirty years before. In this incident in the patient's early history lay the solution of the question as to the cause of his aspermatism. Obviously, in the performance of that operation, the ejaculatory ducts had been torn across and become permanently occluded, and because of the occlusion of these ducts there had followed arrest of development of the prostate gland and seminal vesicles. The author stated that obstruction of the ejaculatory ducts was given as one of the causes of atrophy of the seminal vesicles; he could find no reference, however, to any such influence over the prostate.

Dr. Hayden reported a case of castration for hypertrophy of the prostate in which there had been marked relief of all the symptoms, and the patient's general condition had greatly improved.

Dr. Arthur T. Cabot, of Boston, said that he was inclined to believe that the early good effects following the operation of castration for hypertrophied prostate were largely or partly due to the diminution in the blood supply to the prostate. The relief was too sudden to be entirely accounted for by the process suggested by Dr. White. Dr. Cabot then called attention to the possible secondary effects of this operation on the nervous system. In a certain number of the cases included in Dr. White's list acute mania had followed the operation, and the question came up as to whether secondary nervous effects, such as premature senility, might develop later on. The speaker then reported a case in which he had performed castration and litholapaxy at one sitting: the patient had been a man, aged seventy-five years, and in a rather shaky mental condition before the operation. Immediately after the operation he had become decidedly maniacal. He had been seen by a number of alienists, who had expressed the opinion that his mental condition had nothing to do with the loss of his testes. As he had failed to improve, however, it had been decided to try injections of testiculin. The improvement following its use had been very marked. He had at once become calmer and more reasonable. Before his mental condition had been entirely restored to the normal, the injections had been stopped because of the pain they had given rise to, but the improvement had continued. It simply seemed as if the injections had started him off in the right direction. The speaker said he did not know whether any conclusions could be drawn from this case, but it emphasized the importance of our knowing more about the possible remote effects of the operation on the nervous system before we were willing to displace other operations by this modern one, which certainly had the great merit of being without danger, so far as its performance was concerned.

Dr. Edward Martin, of Philadelphia, said he had seen a number of Dr. White's patients upon whom castration had been performed, and could confirm his statements regarding them. In one case in which he had done the operation himself the result had been very satisfactory. The patient was now comparatively well, and the frequency of urination, which had been very pronounced, had disappeared.

Dr. James Bell reported five cases of prostatectomy in which the patients had been operated on by the suprapubic route. Of these, two had died, the fatal result in both instances having apparently been due to toxæmia. There had been no suppression of urine, and at the autopsies nothing had been found to account for the deaths. As regarded castration, Dr. Bell said he felt somewhat prejudiced against it. He disliked the idea of the mutilation which it entailed, and it was hard to believe that such rapid atrophy of the prostate occurred as had been reported. We must make some allowance, he said, for the reports of cases by enthusiasts who were perhaps not so scientific or such skilled observers as the originator of the operation was. Moreover, the very simplicity of the operation rendered it fascinating.

Dr. W. T. Belfield, of Chicago, said that Dr. Bryson's paper had shown the improvement that could be brought about in the technique of prostatectomy by extended experience. His results were based on a larger number of cases than had been reported by any other single operator, and they gave us a fair idea of the position of prostatectomy to-day. Dr. Fuller's cases were even more remarkable in that there was an entire absence of mortality. He had not quite understood how the operative technique pursued by Dr. Fuller had differed from that before employed by others, and had therefore been unable to say whether that had been an important factor in the brilliant results obtained. In some of his cases he had certainly removed very large prostatic masses, although probably no larger than had been removed by Dr. White in the cases reported three or four years ago.

As regarded the value of castration in prostatic hypertrophy, it evidently failed in many instances. The speaker said he would be unwilling to perform it until he had had his finger in the prostatic urethra. He had seen three cases in which the operation had been urged where stone had been found in the bladder. The operation was done so easily that it was much more apt to be abused than one which required a greater degree of skill. The note of warning which he had recently uttered against the indiscriminate performance of the operation had been provoked by the publication of a case where the facts had plainly shown that it had been performed without due consideration.

Dr. Chismore said he was glad to see a more favorable outlook for operative measures on the prostate. As regarded castration, the facts that were fast accumulating in connection with the subject would soon bring out the proper value of the operation.

Dr. E. E. King, of Toronto, said he had thus far performed the operation of castration in two cases, both of which had proved fatal. In neither case, however, had death been attributable to the operation itself. The first patient had died of pneumonia on the fifth day, and at the autopsy it had been shown that the prostate had been reduced to half its former size; both the glandular and stromal elements had shown distinct evidence of shrinking. In the second case death had occurred on the thirteenth day, and at the post-mortem renal disease had been revealed. These two cases, the speaker said, could not properly be included in Dr. White's mortality list.

Dr. Glenn said that in cases of chronic hypertrophy of the prostate the testes were of no value, and he saw no reason why castration should not be performed. Prostatectomy was a very serious operation. The speaker expressed the opinion that from a physiological standpoint the prostate ought to decrease in size with old age and diminution of the sexual propensity, and he thought that prostatic hypertrophy was largely the result of early gonorrhœal infection. He had performed castration in one case. The patient had been in very poor condition, and his death, which had occurred several days later, could not be attributed to the operation.

Book Notices.

The Senile Heart; its Symptoms, Sequelæ, and Treatment. By George William Balfour, M. D. (St. And.), LL. D. (Ed.), F. R. C. P. E., F. R. S. E., Consulting Physician to the Royal Infirmary, etc., Edinburgh. New York and London: Macmillan & Co., 1894. Pp. ix–300. [Price, $1.50.]

The condition of the circulation in old age, and the cardiac and vascular disturbances so likely to occur in advanced years, are surely matters of immense importance, and yet they are subjects to which too little special teaching has been devoted. To be sure, treatises on cardiac diseases are not devoid of some consideration of age in relation to diseases of the heart, for indeed that would otherwise be unavoidable, but yet the information each of us has is rather the result of a mental compilation derived from varied sources and qualified by personal experience than that of specialized teaching. It is this lack which Dr. Balfour's book fills, and surely nobody could have made a more satisfactory treatise on the subject than he has. It is true that the book is dogmatic, but therein lies its main value, for it is the record of the personal experience of the author and illustrated by records of many a case. Dogma of such a kind is therefore of infinite value when it proceeds from one so competent to assert.

Some things, indeed, there are in the book to which we can not altogether agree—for instance, the assertion that the systolic murmur heard in the second left space near the sternal border is "an early and infallible sign of mitral regurgitation." To give chloral hydrate in doses so large as forty grains to those suffering from circulatory disease seems to us highly unsafe, especially when we learn that there may be one and even two repetitions of this dose if necessary, and furthermore are informed that a single dose of a hundred and twenty grains "is quite within the limits of safety." The author's explanation of the pathology of a gouty paroxysm is ingenious, and certainly it has much to support it, but it is rather a surprise to think of podagra as depending, not upon inflammation, but upon infarction.

These are, however, but few things to object to in comparison with the mass of valuable matter the book contains. Of the author's teaching on senile dilatation, intermission, palpitation, tremor cordis, tachycardia, bradycardia, delirium cordis, and angina pectoris too much can not be said in praise. The therapeutics is excellent, though not differing in most respects from that which is usual, but we commend to the careful consideration of all that immeasurably valuable portion of it, the diet. The book is made the more valuable by its excellence as a literary production, for the style is quaintly original and highly readable.

The Deformities of the Human Foot, with their Treatment. By W. J. Walsham, M. B., C. M. Aberd., F. R. C. S. Eng., Senior Assistant Surgeon, etc., in St. Bartholomew's Hospital, London, and William Kent Hughes, M. B. Lond., M. B. Melb., M. R. C. S. Eng., L. R. C. P. Lond., Orthopædic Surgeon, St. Vincent's Hospital, etc. New York: William Wood & Company, 1895. Pp. vi–550. [Price, $4.50.]

Recognizing, no doubt, the unsatisfactory results from the usual inefficient management of foot deformities, the authors have wisely laid much stress on the portrayal of anatomical conditions and the discussion of ætiology. The work contains a large amount of material testifying to the wide experience and painstaking observation of its authors, but on several points of treatment it appears to us to be hardly abreast with the best modern practice. In the management of ordinary cases of equino-varus the authors appear to rely largely on operative measures, and to fail to appreciate the readiness with which this deformity can be reduced by continuous leverage or forcible manipulation properly applied. Whitman's brilliant work on the elucidation and treatment of flat-foot is not made use of, and the elaborate chapter on that affection appears incomplete. In enumerating the symptoms of flat-foot rigidity and muscular spasm are hardly mentioned.

It appears to us that the work would have gained in force from a larger consideration of the dynamical element in these affections, and in clearness from judicious condensation. It will, however, prove a useful addition to the library of the practical surgeon.

Notebook of Materia Medica, Pharmacology, and Therapeutics. By R. E. Scoresby-Jackson, M. D., F. R. S. E. Fifth Edition. Revised by J. Rutherford Hill, Pharmaceutical Chemist, etc., and Ralph Stockman, M. D., F. R. C. P. E., Lecturer of Materia Medica, School of Medicine, Edinburgh. Edinburgh: James Thin; London: Simpkin, Marshall, & Co., 1895. Pp. cxviii–743.

The first edition of this book appeared in 1866, and since that time it has passed through several editions at the hands of a number of editors. Necessarily, therefore, a considerable difference is to be found between the present edition and the first, and yet the original plan and design of Dr. Jackson have been well preserved and to its great advantage. The work is, as it always has been, unusually generous as to botany and pharmacology, and the additions and modifications made necessary by therapeutic advances suffice to maintain the high reputation it has always enjoyed.

The Extra Pharmacopœia. By William Martindale, F. C. S., Late Examiner of the Pharmaceutical Society, etc. Medical References and a Therapeutic Index of Diseases and Symptoms. By W. Wynn Westcott, M. B. Lond., Coroner for Northeast London. Eighth Edition. London: H. K. Lewis, 1895. Pp. xxviii–584.

We have recently quoted at some length the review of Martindale's *Extra Pharmacopœia* written by Joseph W. England for the *American Journal of Pharmacy*, and it is not long since we reviewed Martindale's *Analysis of Twelve Thousand Prescriptions*, which work enters so largely into the make-up of the book now under consideration. Our present task, therefore, is rather one of general comment than of analytical criticism. The *Extra Pharmacopœia* is a most admirable work, both in theory and in execution, and, though essentially British, it is true, for it could scarcely be otherwise, a breadth and liberality pertain to it which make it valuable regardless of nationality. We, in particular, are gainers by this liberality, and the *United States Pharmacopœia* figures so much in the work that for pharmacal purposes it might almost as well be extra to our own pharmacopœia as to that of Great Britain.

The value of previous editions of the work is well maintained by the present edition, and the additions to it, especially that concise, well-digested, and well-arranged chapter on antitoxines, serums, and lymphs, are well made. Minute criticism, as we have said, is not called for, but we can not refrain from saying that a dose of one twenty-fourth of a grain of aconitine appears to us unsafe even if "carefully increased" to that amount. The definition of antikamnia, too, will be read in the United States with amusement: "An American nostrum, contains about seventy per cent. of acetanilide, with about ten per cent of caffeine, and the remainder bicarbonate of sodium."

The Anatomy of the Nasal Cavity and its Accessory Sinuses. An Atlas for Practitioners and Students. By Dr. A. Onódi, Lecturer on Rhino-laryngology in the University of Budapest. Translated from the Second Edition by St. Clair Thomson, M. D. Lond., F. R. C. S. Eng., Member of the Royal College of Physicians, London. London: H. K. Lewis, 1895. [Price, 6*s.*]

This work is composed of sixteen engraved plates made from photographs of sections of the nose and its accessory sinuses, together with explanatory text. Its excellence and accuracy are attested by the fact that it is already published in four modern languages, although the first edition was published but little over a year ago. To the student of special anatomy or rhinology it will be found a work of great practical value.

BOOKS, ETC., RECEIVED.

System of Surgery. Edited by Frederic S. Dennis, M. D., Professor of the Principles and Practice of Surgery, Bellevue Hospital Medical College, etc. Assisted by John S. Billings, M. D., LL. D., Edin. and Harv.; D. C. L. Oxon.; Deputy Surgeon-General, U. S. A. Vol. II. Minor, Plastic, and Military Surgery—Diseases of the Bones—Orthopædic Surgery—Aneurysm—Surgery of the Arteries, Veins, and Lymphatics—Diseases and Injuries of the Head—Surgery of the Spine—Surgery of the Nerves. Profusely Illustrated. Philadelphia: Lea Brothers & Co., 1895. Pp. 8 to 926.

The Art of Massage: Its Physiological Effects and Therapeutic Applications. By J. H. Kellogg, M. D., Member of the British Gynæcological Society, etc. Battle Creek, Mich.: Modern Medicine Publishing Co., 1895. Pp. xvi–9 to 282.

Formulaire des specialités pharmaceutiques, composition, indications thérapeutiques, mode d'emploi et doses. À l'usage des médecins. Par le Docteur M. Gautier, ancien interne des hôpitaux, et M. F. Renault, lauréat de l'École de pharmacie, etc. Paris: J. B. Baillière et fils, 1895. Pp. 5 to 297.

New York Charities Directory. A Classified and Descriptive Directory to the Charitable and Beneficent Societies, Institutions, and Churches of the City of New York. Sixth Edition. New York: Published by the Charity Organization Society, 1895. Pp. xl–531. [Price, $1.]

Transactions of the New York State Medical Association, for the Year 1894. Vol. XI.

The Parallax Test for Heterophoria. By Dr. A. Duane. [Reprinted from the *Archives of Ophthalmology.*]

Permanent Central Scotoma caused by Looking at the Sun during an Eclipse, and complicated by Uniocular Transient, Revolving Hemianopsia. From Dr. Knapp's Practice. Reported by Dr. A. Duane. [Reprinted from the *Archives of Ophthalmology.*]

Some Points in the Technique of Kidney Operations. By Charles S Briggs, M. D., Nashville, Tenn. [Reprinted from the *Nashville Journal of Medicine and Surgery.*]

Phelps's Operation for Clubfoot. By Charles S. Briggs, M. D. [Reprinted from the *Nashville Journal of Medicine and Surgery.*]

The Murphy Button, with a Report of an Unsuccessful Cholecyst duodenostomy. By Augustus Schachner, M. D., Louisville. [Reprinted from the *American Medico-surgical Bulletin.*]

Suggestions for a Portable Instrument-bag; Operating Overalls; A Bandage for Suprapubic Dressings; A Blanket for Protection of Patients during Operations; A Table for the Trendelenburg Posture; The Sterilization of Sponges; An Antiseptic Soap Paste. By Augustus Schachner, M. D. [Reprinted from the *Annals of Surgery.*]

Influenza complicating the Puerperium. By R. Abrahams, M. D. [Reprinted from the *American Journal of Obstetrics and Diseases of Women and Children.*]

The Treatment of Simple Ulcers of the Cornea. By C. A. Veasey, M. B., Philadelphia. [Reprinted from the *Philadelphia Polyclinic.*]

Hypnotism: Its Uses, Abuses, and its Medico-legal Relations. By William Lee Howard, M. D., Baltimore. (Read at the Forty-sixth Session of the American Medical Association, Baltimore, May, 1895.)

The Administration of the Anæsthetics Practically Considered. By Frederic M. Strousse, M. D., Philadelphia. [Reprinted from the *Therapeutic Gazette.*]

A Report of One Hundred and Forty-five Operations done for the Removal of Ovarian Tumors and Pathological Conditions associated with the Ovaries and Uterine Appendages only. By A. Vander Veer, M. D., Albany. [Reprinted from the *American Journal of Obstetrics.*]

Chronic Tuberculosis. A Study of Four Cases. By E. R. Axtell, M. D., Denver. [Reprinted from the *Colorado Climatologist.*]

A Report of Cases of Brain Lesions—Abscesses, Meningitis, and Sinus Thrombosis—resulting from Disease of the Middle Ear. By J. T. Eskridge, M. D., Denver. [Reprinted from *Medicine.*]

The Cell. Outlines of General Anatomy and Physiology. By Dr. Oscar Hertwig, Professor Extraordinarius of Anatomy and Comparative Anatomy, etc. Translated by M. Campbell, and edited by Henry Johnstone Campbell, M. D., Assistant Physician to the City of London Hospital for the Diseases of the Chest, etc. With a Hundred and Sixty-eight Illustrations. New York: Macmillan & Co., 1895. Pp. xvi–368. [Price, $3.]

Skiascopy and its Practical Application to the Study of Refraction. By Edward Jackson, A. M., M. D., Professor of the Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. With Twenty-six Illustrations. Philadelphia: The Edwards & Docker Co., 1895. Pp. 7 to 112.

Early Scoliosis or Curable Curvatures of the Spine. By Percy G. Lewis, M. D., M. R. C. S., L. S. A., A. K. C., Honorary Medical Officer to the Victoria Hospital, etc. London: John Bale & Sons, 1895. Pp. 7 to 49.

Exercise and Food for Pulmonary Invalids. By Charles Denison, A. M., M. D., Professor of Diseases of the Chest and of Climatology, University, etc. Denver: The Chain & Hardy Co., 1895. Pp. 5 to 71. [Price, 35 cents.]

Reports of the City Hospital and the Woman's Hospital Association from the Date of Organization to February 9, 1895. Wheeling, W. Va.

Annual Report of the Supervising Surgeon General of the Marine-Hospital Service of the United States for the Fiscal Year 1893. Vol. I and Vol. II.

Report of the New York Hospital Saturday and Sunday Collection of 1894. Sixteenth Annual Report.

The Annual Report of the Superintendent and Physician of Walnut Lodge Hospital, Hartford, Conn.

An Address. Delivered at the Opening of the Twenty-fifth Annual Meeting of the Medical Society of the State of California, held in San Francisco, April, 1895. By G. L. Simmons, M. D., Sacramento, Cal.

Nasal Obstruction as a Factor of Tinnitus Aurium. By Francis J. Quinlan, M. D. [Reprinted from the *New York Polyclinic.*]

Civil Service Reform in State Institutions—Reorganization of the Medical Staff. By Boerne Bettman, M. D., Chicago. [Reprinted from the *Journal of the American Medical Association.*]

Syphilis. By William F. Barclay, M. D., Pittsburgh, Pa.

Les grandes problèmes de la science. La naissance de la cellule. Par le Dr. J. A. Guépin, ancien interne, lauréat des hôpitaux de Paris, etc. [Extrait du *Bulletin de l'enseignement supérieur populaire.*]

Klinische Erfahrungen über die Heilung des Krebses durch Krebsserum (Erysipelserum). Von Professor Dr. Rud Emmerich und Dr. H. Scholl. [Sonderabdruck aus der *Deutschen medicinischen Wochenschrift.*]

Die Anwendung des Zymoidin bei Gonorrhoe, ein unentbehrlicher Wegweiser bei Ausübung der Insufflationstherapie. Von Dr. Josef Rosenburg.

Reports on the Progress of Medicine.

OTOLOGY.

By CHARLES STEDMAN BULL, A. M., M. D.

Historical Remarks upon the Operation for Exposing the Tympanic Attic and Mastoid Antrum.—Hartmann (*Arch. of Otol.*, xxiv, 1), by anatomical investigations upon horizontal sections through the middle of the external auditory meatus, and by making vertical sections through the inner end of the meatus, and perpendicular to the axis of the latter, has sought to determine how far chiseling of the posterior wall of the meatus is associated with danger for the facial canal and for the labyrinth, and particularly for the semicircular canals. He found that if chiseling is done through the posterior wall of the canal into the drum cavity, the facial or semicircular canal may be wounded if the chiseling extends one to four millimetres back of the sulcus tympanicus. He considers chiseling of this posterior wall unnecessary, since the lower part of the tympanic cavity is readily accessible to manipulation through the meatus. Where the attic is involved, an operation exposing the cupola space and antrum becomes necessary, but it should be remembered that if we go too deeply into the antrum we shall injure the labyrinth. A permanent cure may often be obtained by the employment of the tympanic cannula, the removal of granulations by the curette, the extraction of the ossicles, and by removing a portion of Riviui's segment with the forceps chisel.

Verticillium Graphii as the Cause of Obstinate Otitis Externa Diffusa.—Herzog (*Arch. of Otol.*, xxiv, 1) reports a case of this nature occurring in a woman aged twenty-seven years. For five or six years she had been subject to attacks of earache in both ears. The integument of the external auditory canal on both sides was much swollen and reddened, so that only a small portion of the tympanic membrane was visible. Hearing distance for voice and tuning-fork tests were normal. The ears were syringed with hot sterilized water and the canals wiped with sterilized cotton, which was then dropped into tubes containing sterilized bouillon. This bouillon, when examined twenty-four hours later, contained mold mycelia. From the culture fluid peptone-gelatin plates were made. These plates at a temperature of 20° to 25° C. developed mold colonies of circular outlines, raised considerably over the surrounding surface of the culture medium, of a grayish-white color, with a slight tinge of yellow. These colonies consisted of mycelium only. The growth was next transferred to potatoes, where it became more highly organized and developed fruit-bearers with spores. The mold obtained answered to the description given by Bezold of verticillium graphii.

Staphylococci and Otorrhœa.—Lermoyez and Helme (*Ann. des mal. de l'oreille et du larynx*, January, 1895) draw the following conclusions from their experience:

1. Acute otitis media is most often of microbic origin; the pus obtained first from paracentesis of the drum membrane generally contains but a single pathogenic species.

2. The streptococcus and the pneumococcus are the microbes usually found. The staphylococcus is rarely found at this period, and is generally associated with other species.

3. After a varying period, a secondary infection is often grafted on the primary infection and takes the place of the latter.

4. This secondary infection is the result of the staphylococcus, especially of the white variety.

5. It determines the transition of the purulent otitis media from the acute to the chronic stage.

6. The staphylococcus may pass from the nasal fossæ through the Eustachian tube, but they generally enter from the external auditory canal through the perforation in the drum membrane.

7. It may exist normally in the canal, for it has been found in the cerumen.

8. It is generally introduced by the employment of non-sterilized dressings, especially ointments.

9. The surest method of preventing the chronicity of a discharge is to take the most severe aseptic precautions in the treatment employed.

10. There must be asepsis of the nasal fossæ and mouth, of the auditory canal, of the instruments and dressings.

11. The best method of asepsis which can be employed is to sterilize the cotton swab in the flame of an alcohol lamp, after it has been dipped in the solution, before applying it to the cavity.

Remarks on the Operation for Exposing the Tympanic Attic or Cupola-space and the Mastoid Antrum.—Hartmann (*Arch. of Otol.*, xxiv, 1) has written an interesting paper. By his anatomical investigations upon horizontal sections through the middle of the external auditory meatus, and by making vertical sections through the inner end of the meatus and perpendicular to the axis of the latter, he has endeavored to determine how far chiseling of the posterior wall of the meatus is associated with danger for the facial canal and for the labyrinth, and particularly for the semicircular canals. He concludes that, if chiseling is done through the posterior wall of the canal into the drum cavity, the facial or semicircular canal may be wounded if the chiseling extends one to four millimetres back of the sulcus tympanicus. Apart from the very unfavorable conditions which chiseling of the posterior wall of the auditory canal offers from an anatomical standpoint, he considers it from a clinical standpoint unnecessary, since the lower part of the tympanic cavity is readily accessible to manipulation performed through the meatus. If necessary, the projecting edge of the sulcus tympanicus may be removed by the double-gouge forceps. The conditions are very different with respect to the tympanic attic. While it is possible in some of these cases, by washing with a tympanic cannula, by removing granulations, and by extracting the ossicles, to effect a cure by manipulations conducted through the auditory canal, it seems requisite, in those cases in which a cure is not attainable by this means, to supplement these measures by an operation exposing the cupola-space, and, if necessary, the antrum as well. But in chiseling the mastoid we may strike the facial or the semicircular canal when we have gone in only twelve or fourteen millimetres from the spina suprameatus. The danger of doing harm by going in too deep is less for the facial than for the semicircular canal, because the latter participates in the formation of the inner wall of the antrum, and usually projects into the antrum itself. Hartmann thinks, however, that, without going into an elaborate operation for chiseling into the posterior wall of the canal and exposing the tympanic cavity completely, a permanent cure may often be obtained by the employment of the tympanic cannula, the removal of granulations by the curette, the extraction of the ossicles, and in some cases by removing a portion of Rivini's segmen.

The Possibility of obtaining Marked Improvement in the Treatment of Deafness and Supposed Deaf-mutism by Acoustic Gymnastics. A System of Vocal Training of the Auditory Nerve.—Goldstein (*Arch. of Otol.*, xxiv, 1) gives here a synopsis of the new system of Professor Urbantschitsch, and its method of conduction, as follows: By way of illustration a case of complete deafness or deaf-mutism is presented. In a loud voice, close to the patient's ear, a vowel is sounded; the patient either receives no impression or indicates a very indefinite sound perception. The exercise is begun by indicating to the patient the vowels to be used, as, for example, *a* and *e*. By several minutes' use of these two vowels, called into the ear in a steady, loud voice, the patient often arrives at a differentiation of sound. Gradually, but as expeditiously as each individual case indicates, the other vowels should be brought into use. Should the patient persist in repeating a wrongly heard sound or word, it is suggested to give him first the right and then the wrong sound, until the differentiation becomes apparent to him. It is recommended that words without meaning should also be used, to determine whether or not the patient really hears the words used. As the progress of each individual case indicates, whole sentences should follow the use of vowels, consonants, and words. The hearing distance should also be gradually increased. As the patient becomes accustomed to the practice, the speaker's lip movements should no longer be observed, in order that the results gained may be those of the aural gymnastics exclusively. Regarding the length of time in each sitting in this practice, it is important to know that a few minutes often suffice to tire such patients' hearing power completely, too prolonged a sitting sometimes temporarily causing a condition similar to nervous asthenopia. At first, sittings from ten to fifteen minutes, repeated two or three times daily, are sufficient; gradually increase the length of each sitting to half an hour or even an hour, to suit the requirements of each case. If an exhausted condition of the patient's hearing power is observed, the exercises should be discontinued for a week or ten days.

The pitch and intensity of voice used must be modified as each case demands. The use of ear-trumpets to intensify sound should be very limited, as a sensitive aural perceptive apparatus may be easily damaged by harsh or sharp sounds. Beneficial results from the use of this system are equally distributed, either in cases of congenital or acquired deafness. Age seems to offer no obstacle to success.

The Influence of Affections of the Upper Air Tract upon the Ear.—Alderton (*Annals of Ophth. and Otol.*, iv, 1) concludes that in external ear troubles, especially cerumen, the condition of the nasopharynx has a slight influence; in middle-ear affections the condition of the nasopharynx exerts a great influence on the aural processes, being directly causative in from thirty-five to eighty per cent. and partly in from ten to twenty-nine per cent. In otitis media et interna the nasopharynx is partly to blame in thirty-six per cent, but in otitis interna only fourteen per cent. The special bearing of greater involvement of either side of the nasopharyngeal cavities seems not to be of much importance as to its influence on the corresponding ear.

A New and more Convenient Instrument than the Politzer Air-bag for Inflating the Middle Ear.—Park (*Annals of Ophth. and Otol.*, iv, 1) has devised an attachment to an air-tank for inflating the middle ear. The nose piece is made of hard rubber, with a cone-shaped end to be inserted in the nostril. On the other side can be attached a metal tip to fit any automatic cut-off attachment. A curved handle, four inches and a half long, adds to its convenience and utility. Its advantages are as follows:

1. One can inflate an ear that it is impossible to inflate with a Politzer air-bag.

2. One can regulate the air pressure by putting in just as many pounds of pressure as is desired.

3. It fits any size of nose and requires no pressure on one side of the nostril to prevent the escape of air during the act of swallowing.

4. It is always ready when it is needed, and there are no valves to leak or rubber to crack.

5. It is inexpensive and lasts a lifetime. Any apparatus for medicating the air can easily be attached.

Case of Acute Suppurative Otitis Media with Mastoid Disease complicated by Glycosuria and So-called White Erysipelas of the Scalp; Operation; Cure.—Bacon (*Rev. de laryngol. et d'otol.*, April 15, 1895) reports a case of this kind in a woman, aged twenty-five years, in whom the catarrhal otitis had lasted for three years. The acoumeter was heard on the left side at thirty centimetres; the hearing on the right side was also bad. She was treated in the usual way for catarrhal otitis media, but three weeks later she suddenly developed all the symptoms of an acute otitis media with implication of the mastoid cells. There was a purulent discharge and the mastoid was very sensitive, though there was neither swelling nor redness. The urine contained a large quantity of sugar but no albumin. The mastoid was opened and a large quantity of detritus and granulations removed, and the wound was then dressed in the ordinary manner. Subsequently there was for several days a slight rise of temperature, and on one occasion a chill, which looked toward retention of pus, but the scalp on the left side of the head became swollen without any redness, which led to the opinion that it was a case of white erysipelas. The patient was at once given aconite and belladonna, and the scalp was kept covered by cloths dipped in a lead and opium wash. From this time the patient did well, the discharge from the ear having diminished with the appearance of the erysipelas. The patient was discharged in the eighth week, all sugar having disappeared from the urine some time earlier. Bacon thinks the glycosuria was of nervous origin, due to a reflex action.

Rebellious Stenosis of the Cartilaginous Portion of the External Auditory Canal and its Treatment.—Corradi (*Ann. des mal. de l'oreille et du larynx*, April, 1895) believes that any intervention in cases of grave stenosis of the external auditory canal, accompanied by considerable hypertrophy of the soft tissues, should always be of an operative nature. If the stenosis is not extensive, a simple circular incision through the tissues is indicated. If, however, the stenosis is very extensive and especially involves the external portion of the canal, the auricle must be detached, so that the surgeon may reach and excise the deeper portions of the canal.

Researches upon the Sensory Epithelium of the Ear.—Coyne and Cannieu (*Ann. des mal. de l'oreille et du larynx*, May, 1895) draw the following conclusions from their investigations: 1. The sensory epithelium of the ear consists of two kinds of cells, the ciliated sensory cells and the supporting cells. 2. The supporting cells have their nuclei disposed in two rows, a pseudo-stratification. 3. The ciliated cells are of two kinds, those with long neck and those with short neck. 4. The cells of the spiral papilla are of identical shape in the rodents, in carnivora, and in man. 5. The stratification observed in these different varieties of epithelium is only apparent, due to a disposition of the nuclei at different heights. All these cells start from the basal membrane and end at the level of the free surface of the epithelium.

An Unusual Case of Aural Deformity.—Holinger (*Ann. of Ophthal. and Otol.*, April, 1895) reports an interesting case in a girl, aged fourteen years. The whole head was asymmetrical. The left facial side was inferior to the right in all dimensions, and showed a marked depression which extended from the ramus of the lower maxilla to the linea temporalis, and from the zygoma to the occipital region. The lobule of the ear was smaller than normal, but the superior point of insertion of the concha seemed to have been drawn downward and forward toward the external angle of the mouth. The line of insertion formed three quarters of a circle, and the free margin of the concha was bent upon itself at an acute angle. The tragus was missing, so that one could look through the open quadrant into the funnel-shaped external canal, which at slight depth was impervious to thin probes. The following operation was done: Half the concha was dissected from its broad and flat attachment to the cheek, and sewed to an incision in the vertical prolongation of the still adherent part. The result was a slight drawing of the mouth to the side operated upon, and a slight ectropion, both of which subsequently disappeared. There remained a small vertical cicatrix in front of the ear, and a somewhat pointed ear.

New Inventions, etc.

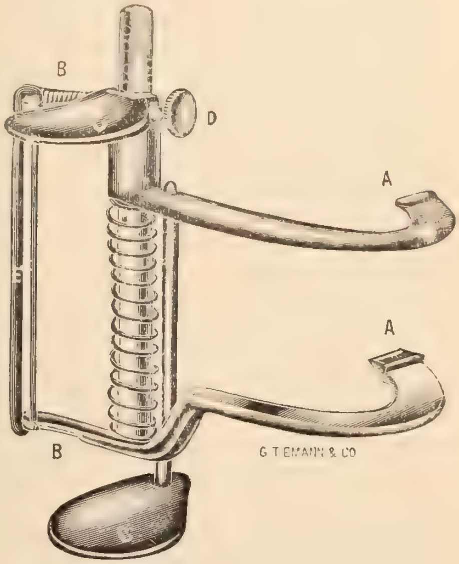
A NEW MOUTH GAG.

By Louis Bors, M. D.,

BUDAPEST, HUNGARY.

The advantages derived from this instrument are the following:

1. The gag can be placed in the mouth without the use of a spoon.
2. The mouth is under the full control of the operator, who can open or close it at will.
3. The gag is self-retaining, and therefore no assistant is needed.
4. It can be taken apart quickly and easily, and can therefore be thoroughly disinfected.



The instrument is composed of two steel plates, A B, A B; two connecting rods with two round plates, C, C; and a spiral spring between the two plates, around the upright (thicker) rod. The gag can be used on either side, but must be turned over.

It is manipulated as follows: The thumb and forefinger of each hand are pressed on the plates A A and B B, thus closing the instrument, which is then ready for introduction. It can then be forced between the teeth, when, by pressure on the round plates, C C, the mouth can be opened at the will of the operator. On the upper round plate is a screw, D, which regulates the opening of the plates A A. The rubber band E, which is fastened at B B, can now be drawn over the ear. The more the patient bites on the plates A A, the firmer will the gag maintain its position.

The instrument is made by the well-known firm of Tiemann & Co.

Miscellany.

"Spot Specialism."—This is the striking title given by Dr. C. H. Hughes, of St. Louis, to a paper that he was to read, but that was read by title only, at the last meeting of the

Mississippi Valley Medical Association. The paper is shortly to appear in Dr. Hughes's journal, the *Alienist and Neurologist*, and he has kindly furnished us with advance sheets. He thus defines "spot specialism":

"What I mean by spot specialism is that kind of professional thought and practice which confines its observation and remedial efforts too exclusively to a particular locality, organ, or group of organs of the body, without taking due account of the interrelation of local and constitutional states, the reciprocal influences of local disease on the organism in general and of the organism on the disease, the patient as a whole being too often either lost sight of or inadequately considered, especially the many precedent and predetermining conditions of the patient. In practice, too much of the general condition of the patient is regarded, through concentration of thought and treatment on a single organ, as the consequence of the local disease, whereas some or many of the patient's symptoms are due, in almost every case, to the developing or developed breakdown in the general organism, and particularly in the nervous system, which made the attack and progress of the local disease a possibility, as, for instance, when the nucleogenesis or nuclein-forming power of the blood is so impaired that microbes may live in the blood and tissues, and what we call resistance, which consists in the tonicity of the nerve centres, as well as in the amount and quality of the nuclein, is impaired, permitting the lodgment of disease germs in the tissues and the consequent development of their peculiar diseases and sequent morbid actions of organs or organism.

"This sort of spot specialism," adds Dr. Hughes, "is not confined to practising specialists as we understand them, but is the fault likewise of the general physician, that ubiquitous and all-around practitioner for whom the amiable specialists are constantly expending their brains in monographs, pamphlets, lectures, and don'ts, and who gives the narrow specialist in return many practical points about treating the whole patient when he is sick apparently only in a spot (if we look at him with our eyes centred only upon the locality or organ which is chiefly disordered and causes the patient's principal discomfort). This is when the *loci resistentiæ minores*, so often quoted by our German authors, are discovered in our patients and particular diseases develop, as, for instance, morbus Brightii after rheumatic neurasthenia and anæmia.

"General medicine, beginning with Hippocrates and followed by Sydenham, is responsible for having piled upon the long-suffering liver innumerable diseases beyond its capacity to bear. Sydenham almost made the Englishmen of his day believe that they lived solely because of their livers, while Abernethy made health depend chiefly on their stomachs, so that whenever they were ill the liver must be disgorged and the stomach put to rest. This was pretty good practice with the limited therapeutic resources of his day, for the average Englishman gorged both, and a good emetic and a cholagogue relieved both and gave the whole man a rest. This is good initial practice for our day in many conditions, too often overlooked, of general nervous exhaustion and consequent debility of the nerve centres upon whose tonicity the integrity of function of both stomach and liver are greatly dependent, and there was some reason for the frequent phlebotomies of the preceding century. But to stop here is only spot specialism, for atonic neural conditions precede hepatic torpidity, as well as follow it and dyspepsia or apepsia, and this may precede or follow an anæmia or toxic cachæmia.

"Fortunately in practice, often, the emptying of the liver and the stomach, and the diet we prescribe, give the patient the rest he needs, as bleeding used to do in plethoric states and hyperæmia, and with the return of organic recuperation the local conditions do not immediately reappear and we pronounce the patient cured. But is he? No. Not entirely in the majority of cases. Something precedent in the general condition of the patient has led to those states of the two important viscera which have attracted our attention, and if we are wise physicians we shall keep our patient under observation and treatment until the patient is perfectly well all over, with no tendency of the local disorders to recur."

Further on in the paper Dr. Hughes says:

"Specialism will, in the future, prove either a bane or a benefit to mankind and to medicine in general, as it narrows or widens its view of the part of the organism in which its work and research are limited. The multiplication of special societies and their aggregation into general societies of aggregated specialties, each addressing always its own set and circle, must tend to contract rather than expand our medical view of man in disease, or, if not that, at least to professional segregation, and continual segregation would be disastrous to the highest and broadest professional advancement and lead to the ultimate disintegration of the profession.

"Special work is right enough. It is a necessity growing out of the vastness of the field of effort and its continual expansion, but restricted thought in the practice of a specialty is detrimental to the patient's interests and the doctor's judgment and skill. When one is ill, it is the entire patient who needs our attention, not alone the most afflicted spot. The interlacing and overlapping of the specialties and the relationship of part to whole and whole to parts of the organism, make general medical knowledge essential to success in any specialty."

"Each specialty," says Dr. Hughes, "is dependent upon every other for aid; all are dependent more or less upon the general principles governing the development and continuance of disease in the human system. While there is abundant room and need for the special worker, because of the magnitude of the labor of the physician who would attempt to treat all diseases, there is no place in medicine for the spot specialist. The specialist may work in as limited a field as he may please, but he should think and study the patient all over. As a general practitioner gradually developed into a neurologist, I acknowledge my indebtedness to a general knowledge of medicine from a sufficiently large and lengthened previous experience to keep my mind alert to influences of the whole organism on the system which has engaged my special attention, and of that system on the whole organism and upon its several parts, organs, or systems, for whatever of success may have attended my efforts in practice. . . . One of my earliest triumphs in neurological practice was the result of a clinical fact I had learned while a surgeon in the army—viz., that the malaria of our Mississippi bottom lands is capable of producing non-periodic paralysis. The case was that of a child with an apparently sudden attack of poliomyelitis anterior acuta. She was brought to me in her mother's arms, helpless below the knees. Under heavy daily doses of quinine, arsenic, sodium bromide, and hypophosphites and regular galvanism, she could stand by a chair within a month, and go across the room at the end of six weeks. She is now a mature woman, vigorous and robustly healthy. My success in neurology was here due to my general medical observation. Another instance was in a case of acute melancholia in my military hospital at De Soto, Missouri, during the war, where the soldier was promptly cured of his melancholia and fistula in ano by the proper operation on the rectum; and in my experience as medical superintendent of the State Hospital for the Insane, it was often necessary to treat a patient for many morbid conditions, sometimes nearly all over, before the cure of his insanity could be accomplished. And now, after more than a third of a century of daily study of man's entire organism in relation to disease and nearly a quarter of a century in the study of neurology and the practice of neuriatry, I consider the vital centres of the medulla, the sweat, heat, and reflex centres of the brain and cord, together with the ganglionic system, and the correct comprehension of their relations to disease, of far more importance in the practice of medicine than the study and treatment of any number of organs of the body without this knowledge."

The Painful Paralysis of Young Children.—The *Presse médicale* for June 29th contains an article on this subject by M. Brunon, who remarks that in all the cases observed by him the characteristics have been practically the same, and that the following case illustrates the condition: He was called to see a child in whom one of the arms was found to be in a condition of flaccid paralysis, and on attempting to raise it slightly or to bend the forearm back it fell heavily against the body, completely inert. There was no anæsthesia; if the skin was pinched the child would cry; sometimes he could not move the arm in spite of his efforts to do so; sometimes he was able to move it slightly so as to ease the pain. When the arm was examined, however, the least movement was painful and caused the child to cry. M. Brunon says there was no apparent cause for this condition, which had come on suddenly while the child was playing quietly; in some cases the children had been lying quietly in bed when first attacked. In the face of such facts, he says, a physician is naturally perplexed; he may attribute the trouble to an osseous or an articular traumatism, and at once examines the head of the humerus, the lower extremity of the radius, or the articulation of the elbow. In this case the trouble disappeared a few days afterward and the arm was perfectly normal. Chassaignac, says the author, has remarked that this rather strange paralysis is met with nearly always during the early years of life; out of fourteen cases, he had met with but one in which the patient was over five years of age.

With regard to the exciting cause of this affection, it is always a sudden jerk or twist of the hand, of the forearm, or of the entire arm itself, but the pain and the paralysis are always situated in the upper part of the limb. The characteristics of this painful paralysis, says M. Brunon, may be summed up as follows: 1. The onset is instantaneous, following a slight traumatism, which very frequently is not noticed. 2. The paralysis is at first more or less complete, slight movements returning and becoming more decided in proportion as the pain diminishes. The passive movements are perfectly preserved, but the active movements are done away with. 3. Instantaneous pain, apparently spontaneous, afterward caused by the movements. It is very acute at first, but gradually diminishes in a few days. The arms are more frequently attacked than the legs. 4. The pain and the appearance of the arm give a special character to the paralysis; the arm falls completely inert against the body. 5. The absence of all persistent anatomical changes is very probable, although Chassaignac has spoken of articular cracking. 6. Recovery is rapid, occurring in from twenty-four hours to a week.

With regard to the nature of this affection, says M. Brunon, Chassaignac discarded the idea of luxation, of fracture, or of tearing of the ligaments, since there was no deformity, no ecchymosis, no excoriation, and no trouble in the working of the articulations. He was inclined to think that it was a purely nervous local affection, a sort of concussion of the brachial plexus comparable to that of cerebral concussion. M. Cerné, of Rouen, is cited as saying that he had observed in one case the existence of a slight sprain of the radio-cubital ligament. M. Camille Moreau, of Charleroy, has said that he thought it was a question of subluxation of the head of the humerus not causing deformity of the shoulder or preventing certain passive movements. M. Minerbi, of Ferrare, says the author, is of the opinion that it is a subluxation of the head of the radius. This opinion is based on the cases observed by M. Minerbi, on his experiments on cadavers, and finally on the statistics he has been able to collect with regard to luxation of the elbow by elongation. According to M. Pingaud, the lesion is situated in the elbow, and consists of a downward displacement of the head of the radius with integrity of the ligaments. The lower semicircumference of the annular ligament rises above the cupula of the radius. Sometimes there may exist a subluxation behind or in front of the head of the radius without tearing or displacing the annular ligament.

If, says M. Brunon, we refer to the symptoms of this luxation, we shall find about the same condition as that which is known as painful paralysis. However, it must be noted that in luxation the only invariable and characteristic sign is the impossibility of bringing the child's hand into the state of supination. Moreover, of seventeen cases observed by M. Bourguet, in two only was the arm seen hanging limp against the body. In the cases observed by Chassaignac, also in the author's cases, all the passive movements were free, and in all the children the arms hung inert. The question has been studied only by surgeons, who, with the exception of Chassaignac, accept a surgical explanation, without agreeing, however, as to the seat of injury.

M. Brunon freely admits that the point of departure of the pain is in ligaments that have been jerked or twisted, but he thinks that these purely anatomical explanations are not sufficient, and he still believes that there is another cause than a purely local traumatism. He bases his opinion on the principal fact that, in the cases under his observation, the affected limb did not present the appearance that it did in cases of luxation or of subluxation. It was not bent or contracted, or in pronation or supination; it was inert and flaccid. The pain appeared on the least movement, sometimes in the shoulder, in the elbow, in the wrist, or in the fingers. Notwithstanding all attention, it was impossible to find what articulation was painful or if any articulation was painful at all.

The nervous actions of arrest, says the author, are still very little known in their mechanism and in their consequences, although they may give the key to a few of the phenomena of paralysis. It is admitted, however, that the actions of arrest may prevent a movement from being produced. It may also be admitted provisionally that in the painful paralysis of young children the theory of actions of arrest may explain the paralysis. But, asks M. Brunon, how may we explain the pain which is caused by the least movement? The pain is not directly due to the passive movements; it only comes on in connection with them.

The progress of the symptoms, says M. Brunon, in the painful paralysis of young children seems to corroborate the opinion expressed with regard to its pathogeny. Recovery supervenes spontaneously during the first few days after the accident, and therefore active intervention does not seem necessary.

Chronic Dysentery of More than Four Years' Standing Cured by Rest in Bed and a Milk Diet.—In the *Lancet* for July 6th Dr. W. Hale White relates the case of a man, thirty-three years old, who was originally a healthy subject. In 1882 he had a slight attack of malarial disease and in 1888 a severe attack of dysentery. He was admitted into the hospital at Melbourne, where he remained for twelve weeks. When he left there he was better, but had a relapse immediately, and, gradually getting worse, he finally started for England and arrived there in 1889. From that time until 1894 he went to many medical men, who gave him drugs, but none of them prescribed continued rest. The dysentery would disappear for a short time, after which it always returned, and he was consequently quite unable to follow any occupation. When the author saw him the bowels moved four or five times a day, the motions contained much mucus and blood, he complained greatly of dull abdominal pain, especially in the left iliac region, his tongue was covered with a thick fur, and he was very anæmic, sallow, and wasted. The author expressed the opinion that the only treatment likely to cure him was complete rest in bed and a milk diet for many months, and the patient consented to try it. He was allowed no food, except two pints of milk a day. Ten grains of powdered ipecacuanha were given three times a day, also twenty grains of carbonate of bismuth, twelve minims of tincture of opium, twenty grains of compound tragacanth powder, and sufficient water to make an ounce, three times daily. The patient had been put to bed on March 31st, and on the 6th of April the motion contained no mucus, but still a little blood. The pain was better. The use of the mixture was stopped and the ipecacuanha was given in the form of a five-grain pill three times a day, as the patient was very sick. On the 10th of April the ipecacuanha was put into cachets, as the pills were passed unchanged, but, as the patient continued to be sick, the use of the medicine was stopped altogether. On the 16th there was still some blood and mucus in the motions, and there was some pain in the abdomen. A mixture containing ten grains of carbonate of bismuth, ten grains of sodium bicarbonate, and ten minims of liquor morphinæ hydrochloratis was then given to the patient, and on the 25th he was allowed four oysters a day in addition to the milk. On May 1st he passed a formed motion for the first time. The pain in the side had diminished and the mucus and blood were much less abundant and frequent. By May 25th the motions were always formed, and frequently there was no blood or mucus, or, if any was present, the amount was very slight. The pain had almost disappeared. From this time, says Dr. White, the progress was uninterrupted, and by July 3d the patient had improved very much in all respects. He was then allowed some coffee. On the 27th the improvement continued and he was allowed some custard. On August 22d bread and milk, without crust, and a little bread and butter were added to the diet. On the 27th he got up for a short time, having been in bed continuously for five months. On September 8th he was allowed to eat fish, on the 14th he went out for the first time, and on the 21st he was permitted to eat meat. On October 8th he went to the country, where he remained until December, when he stated that he had been steadily gaining in strength and in weight, also that he had lived chiefly on milk. During the spring of 1895, says the author, he was apparently quite well, playing golf daily and taking ordinary plain food. In May he went back to business, thirteen months after the treatment began, and he is still in excellent health. During the time he was under treatment an occasional enema of olive oil was administered when it was necessary on account of constipation. None of the medicines were administered for a great length of time, as it was found that the patient did better when he was not taking drugs.

It has often seemed, says Dr. White, that the treatment of intestinal affections is frequently too active, and that the great principle of giving an inflamed part rest is neglected; all sorts of drugs, many of which may cause enteritis, are given, and it is forgotten that lying in bed is one of the best ways of keeping the bowels quiet. The simplest way to give the surface of the colon freedom from irritation is to feed the patient on small quantities of milk at frequent intervals, say every two hours, a total of two pints a day for an adult being quite enough. If undigested curds are passed in the motions it may be peptonized; if the monotony of the taste is disagreeable, it may be flavored with a very little coffee. Should his diet lead to much constipation, from four to eight ounces of olive oil thrown up the rectum every third day will give relief. Complete rest in bed is essential. The author has seen this treatment cure long-standing cases of simple colitis without the administration of any drugs. In a very bad case of membranous colitis which had lasted ten years he had recently carried out the principle of giving rest so far as to have a right colotomy done, all the fæces for six weeks being allowed to pass through the artificial anus, thereby giving the colon absolute rest. The principle of giving the colon rest was acted upon in the foregoing case. It will be observed, says Dr. White, that the patient had been in England, suffering from chronic dysentery for four years and a quarter; that he had been going to many medical men who had given him all sorts of drugs, but that he had never been kept in bed for months on a milk diet. Nevertheless, this simple plan succeeded so well with him that, although it is ten months since he was allowed to get up, he has had no sign of a relapse and is now in robust health. That this is the correct treatment for chronic dysentery is borne out by such great authorities on the subject as Dr. Ward, who says that most of the vaunted remedies are useless, but rest in bed and milk are essential for success; and Mr. Harry Leach, who says the same, and adds that success with drugs is the exception, and that those patients do best who are least drugged. Dr. White states that his reasons for publishing his case are to redirect attention to the papers of Dr. Ward and Mr. Harry Leach—and this is the more important, he says, as the subject of the treatment of chronic dysentery is almost ignored in many books which deal specially with dysentery—and to show that when the disease has lasted many years the patient may be restored to complete health. The milk diet should be continued until the pain, the diarrhœa, and the passage of blood or mucus have ceased, and formed motions have been passed for some time. The patient should not get up until at least a fortnight or three weeks after he has passed from a milk to a farinaceous diet. It will be noticed, says Dr. White, that the restricted diet was continued, although the patient lost weight. If he is not allowed to become too weak, this is of little importance compared with the advantage gained from rest to the colon.

A Case of Argyria.—The July number of the *Dublin Journal of Medical Science* publishes an article by Dr. H. C. Tweedy in regard to the therapeutic value of nitrate of silver, in which he says that the staining of the tissues from the prolonged use of this drug has of late years become comparatively rare, owing to the gradual decline in its use for the treatment of nervous diseases. For this and other reasons he thinks the following case possesses sufficient interest to justify its being recorded: The patient, a man seventy-seven years old, came under Dr. Tweedy's observation in 1871. He was suffering from well-marked ataxic symptoms, which had been gradually increasing for some months—pronounced girdle pains, lightning pains, characteristic gait, throwing out the feet when walking, with the toes pointed upward, and bringing the heel first to the ground each step he took. He required the assistance of a stick in walking, complained of weakness in his legs, and a sensation of numbness so that he could scarcely feel the ground with his feet. When asked to close his eyes when standing erect, he began to totter immediately, and on turning rapidly when walking he would have at once fallen had he not been supported. In short, the case was diagnosticated as one of locomotor ataxy, and he was ordered a third of a grain of nitrate of silver, three times daily, in a pill. The use of the pills was continued for a fortnight, discontinued for a week, and then resumed, and he was kept on the same treatment during the six weeks he remained in hospital. Being obliged to leave suddenly, he took the prescription with him and continued the use of the nitrate of silver with tolerable regularity for two years. He then reappeared in the hospital (in 1873), and his condition was decidedly improved. The use of the same drug was continued, at intervals, till 1876, when he was again admitted to the hospital, with some return of the ataxic symptoms. He was then treated with potassium iodide for a short time, but with such unfavorable results that the nitrate of silver was again reverted to with success.

Dr. Tweedy lost sight of him for six years, when he again turned up in Steevens's Hospital in 1882 (this time to consult him for eczema of his legs). All the ataxic symptoms had now disappeared, but he stated that he had continued to suffer occasionally from pains in the back and loins, which came on acutely from time to time, accompanied by sickness of the stomach, and that on each occasion he had obtained relief from a course of the nitrate-of-silver pills.

The author now noticed for the first time the change in his complexion, his face being of a dull slaty-blue color, as were also his hands, and, to a lesser degree, the rest of his body, but his general health was excellent, and in 1883 Dr. Tweedy exhibited him before the Academy of Medicine as an example of the beneficial effects produced by nitrate of silver on a case of what had been reasonably supposed to be locomotor ataxy.

At the close of 1894 he came once again to show himself to the author, who remarks that, except for the inevitable signs of old age, there is little to add to what has been said regarding him. He has been taking the nitrate of silver occasionally now for twenty-three years, and, so far as can be ascertained from the patient's statements on the subject, he has taken more than two thousand grains of the drug at a very moderate computation. Of the exact time when the discoloration of the skin first commenced Dr. Tweedy has not been able to obtain any reliable information. It was not noticeable when he saw the patient in 1876, and it was well marked in 1882, but when it commenced the patient is unable to state.

This condition, says the author, like lead poisoning, is said to occur in those engaged in working at silver, and, like lead poisoning, it is occasionally followed by symmetrical extensor palsy. It is beyond question, he says, that the continuous use of silver salts, whether externally or internally, is likely to give rise to not only a local, but a general argyria. Duguet mentions a case in which this condition followed repeated cauterizations of the throat with silver nitrate. Hutchinson speaks of two cases of general argyria, in which the history showed that the drug had been applied externally only—in one case locally to syphilitic sores, and in the other case to the mouth and throat. In the latter case the staining appeared after a lapse of eight years. Crocker also alludes to a similar case. Numerous other cases, says Dr. Tweedy, might be cited in which the condition followed the application of the drug to the surface of wounds and to its internal use for nervous and gastric affections. All these cases, he says, serve to emphasize the fact that silver salts, if introduced into the body, are eliminated from it but to a very slight extent if at all. The quantity of silver requisite to produce argyria must be subject to considerable variation. According to Krahmer, the smallest quantity that has produced it is four hundred and fifty grains, but in one of Riemer's cases one thousand seven hundred and forty grains had been taken in the course of a year before any staining of the skin appeared. Olshausen, says the author, recently gave an account of a case in which a large open wound had been treated with a one-per-cent. solution of silver nitrate. The mucous membrane of the cheeks, of the gums, and the lower surface of the tongue became stained of a blue-black color, and eight days later the patient died of exhaustion from diarrhœa.

We are indebted, says Dr. Tweedy, to Fraschetti and to Robert for the most recent information concerning the experimental investigations in relation to argyria. The former draws the following conclusions: 1. All silver preparations give rise to argyria, even to a local deposit, upon their external employment. 2. Reduction of the silver salts administered takes place in the stomach and afterward in the intestinal canal, tending to the separation of the metal. 3. Silver finds its way into the organs through the lymphatics. 4. It is not eliminated by the urinary organs or by the intestines. 5. It does not, as a rule, produce any material effect upon the health. Robert practically indorses Fraschetti's conclusions, but further states that the silver, if injected directly into the blood, becomes incorporated with the white corpuscles, forming also with the serum of the blood a complex albumin product, and that it then undergoes reduction to metallic silver or oxide of silver, appearing in the form of black or brown spots, staining the borders of the gums and the last phalanx of the fingers. Later on the deposit appears in the skin of the face and of the body, being most apparent in the portions most exposed. Similar deposits are found in the liver, the kidneys, the spleen, and the small intestine. No deposit, according to this author, says Dr. Tweedy, takes place in the epithelium cells of any organ, in the muscles, in the nerves, or in the laminæ of the bones, but the staining will be found chiefly in the connective tissue, especially in the chorioid plexus, in the tunica propria of the sebaceous glands, the sweat glands, and the mucous glands, etc.

Dr. Tweedy thinks that the foregoing case furnishes the following conclusions: 1. That no precautions can guard against the staining that follows the prolonged use of nitrate of silver. In the present instance the possible occurrence of argyria was foreseen from the first, and, with a view to guarding against it, the use of the drug was regularly discontinued for a week, after having been used for a fortnight, but without avail, as may be seen.

2. That the health of the patient has not suffered in the least from the use of the drug during the long series of years since 1871.

Dr. Tweedy says that all attempts to effect decolorization in this affection have proved practically useless. Some years ago Gaudell advocated large doses of potassium iodide combined with mercurial vapor baths for this object, and stated that in the case of two syphilitic patients with whom the treatment was persistently carried out for several months, decolorization was eventually effected. The utility of this method seems to be exceedingly doubtful, and, so far as he is aware, no other cases have been recorded in which the treatment has proved successful.

The most important lesson, says the author, connected with this case has been the decided beneficial effect, explain it as we may, produced by silver nitrate upon a patient who presented most, if not all, the prominent symptoms of locomotor ataxy. This is not merely coincidental. The case has now been under observation at intervals for more than twenty-three years. The symptoms that have been detailed gradually disappeared while the patient was using nitrate of silver. He ceased the use of the drug, and after a time some return of the symptoms took place, vanishing a second time, however, as he resumed his former prescription. Once again the trouble reappeared, and, fearing he was taking too much nitrate of silver, the treatment was changed to potassium iodide, but only with injurious effect. The use of the old remedy was once more resumed, and again with happy results. It is now more than ten years since he showed any definite symptoms of ataxia. He has none whatever at the present time, and Dr. Tweedy thinks it may be fairly conceded that the discoloration of his skin has not been an extravagant price to pay for the benefits he has derived from the use of a drug which, if it was formerly used incautiously and with too little discrimination, has of late years been relegated to a retirement from which it might occasionally be recalled with advantage to the patient as well as credit to the physician.

Sanitaria for Consumptives.—In the *Union médicale* for June 22d, M. Rochard remarks that the mode of treatment instituted by Dr. Detweiler at the *Institut de Falkenstein* was not at first taken sufficiently in earnest. The idea of consumptives' living in the open air at a low temperature and allowing currents of air to pass through their bedrooms at night was looked upon as eccentric, but the advantages of this mode of treatment, says the writer, have come to be recognized, for the pure, cold air quiets the cough, lowers the fever, arrests the night sweats, restores the appetite, and retards the course of the disease.

A knowledge of these results has led to the establishment of a number of sanitaria in Germany, and there are now six in existence. They are, however, accessible only to the rich; but attention has been called to the necessity of hospitals for poor consumptives, and efforts are now being made for the establishment of special hospitals for their reception.

In a report to the consulting committee of public hygiene, says the writer, Dr. Netter has given an outline of the precautions to be taken against the dangers of contamination in the neighborhood of these sanitaria. These dangers, says M. Rochard, if they exist at all, threaten the establishments themselves rather than the neighborhood, although experience has shown that nothing is rarer than a case of tuberculosis contracted in the sanitaria which have been in existence for many years in certain countries. There is no ground for the fear that patients may infect others, because greater precautions are taken in these sanitaria than in the general hospitals or in private houses, and the neighbors are no more exposed to danger than the inmates of the sanitaria themselves.

Expired air, as is well known, does not contain the bacilli, and if the wind carries infectious germs, it is only when it contains powdered dry sputum, and this danger is done away with if the sputum is carefully destroyed.

M. Netter's report, says the writer, concludes with the following precautions: 1. Sanitaria should be built upon high ground and surrounded with cultivated grounds and parks, making a boundary line between the public and the patients, who should avoid going beyond it as much as possible. 2. Each establishment should possess a steam apparatus for the purpose of disinfection, through which all the body and bed clothing should pass before being washed. 3. The rooms should be painted and disinfected before they are occupied by new patients. The floors should be covered with linoleum. 4. The dejecta should be thoroughly disinfected before being disposed of. 5. The patients must be forbidden to expectorate elsewhere than in the portable spittoons, which should be disinfected every day.

These regulations, says M. Rochard, have been approved by the consulting committee of public hygiene of France.

A Fatal Case of Generalized Eczema.—The *Gazette médicale de Paris* for June 29th contains a report of a recent meeting of the *Société médicale des hôpitaux* at which M. Le Gendre related the case of a child, six months old, who had suffered with an attack of seborrhœal eczema which presented interesting features during its development, and was accompanied by an uncontrollable diarrhœa. The child's parents were neurotic and arthritic. When the child was four months old the eczema appeared on the face, and increased notwithstanding careful treatment. A wet-nurse was employed for the child, but was discharged on account of drunkenness. Another one was engaged to take her place, and for several days the child seemed to improve. However, the eczema again broke out and rapidly became generalized. At the same time a diarrhœa set in that could not be controlled, and the child soon began to grow thin. M. Besnier, who knew that the first nurse had been addicted to the use of alcohol, thought that the trouble might be due to the fact that the child had been too suddenly deprived of the stimulant, and he recommended a few teaspoonfuls of grog every day. In spite of this, however, the troubles persisted and the emaciation became great. All means employed, even injections of artificial serum, failed, and the diarrhœa could not be arrested, although different kinds of milk were tried. This condition lasted for five weeks without fever, when the temperature rose suddenly to 101·6° F., and then gradually increased until it reached 105·4°. The child became comatose, and three days later died from a very acute infection without lesions.

In spite of the utmost care, said M. Le Gendre, two nurses were attacked with lymphangeitis of the breast, and an abscess appeared in one of them several days after she stopped nursing the child. The little patient himself had an aphthous stomatitis, and when the last symptoms set in there was slight redness of the throat.

From these facts, said M. Le Gendre, the following conclusions might be drawn: That the child had shown a peculiarly virulent condition of the saliva, to which could be attributed the attacks of lymphangeitis observed in the nurses, and that this condition had probably been the cause of the acute infection in the child.

A Woman Doctor in Disguise.—The *Progrès médical* for June 22d publishes the following: More than twenty years ago there lived a surgeon in the English army, named Macleod. He was grave, clever, learned, and reserved, and his associates often laughed at him for his soberness and quiet demeanor. One day, while he was in India, a lieutenant approached him and jokingly remonstrated with him for living like a woman; whereupon Macleod slapped the officer in the face. This action led to a duel on the following day, in which the officer was killed. Macleod at once sent in his resignation and returned to England. When he died, several years afterward, it was found that Surgeon Macleod was a woman, and private papers attested that this woman was a descendant of one of the oldest families of the United Kingdom.

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FAVORABLE RESULTS OF
KOCH'S TUBERCULIN TREATMENT
IN TUBERCULAR AFFECTIONS THAT ARE NOT PULMONARY.

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The use of tuberculin is either stoutly decried or held in abeyance by the large majority of physicians and surgeons. If the majority were to rule in the determination of such use there could be little advance in this direction. But the mass of physicians have decided this question by hearsay or second hand, while many others are frank enough to admit the immunity-producing effect of the remedy, but conclude that the liability to error in the diagnosis of concealed *pulmonary* tuberculosis is so great and the knowledge of the limitations of the remedy and the technique of its administration so essential and particular that they hesitate to employ it.

By others it is named a toxine, and that is sufficient argument against its use for them, notwithstanding the strong probability that there is an antitoxine, an immunity effect, produced by its use in the tubercular individual's system which they have not recognized.

The truth undoubtedly is that the difficulties with regard to its use in pulmonary tuberculosis are increased about fivefold because of the five times greater activity of the capillary circulation there, greatly augmenting the tendency to overaction—to exaggerated necrotic effects in the lung tissue affected, the exact nature of which an *ordinary* physical diagnosis does not determine. The usual shortcomings of the medical profession in the proper diagnosis and understanding of concealed lung tuberculosis thus become positive hindrances to the extended use of Koch's tuberculin.

The exceptional experience, however, of such men as Trudeau, von Ruck, and Whittaker, with whom the writer would feel honored to be classed, tends to give confidence in the cautious use of tuberculin, on lines different from those proposed by its inventor, and in selected cases of pulmonary tuberculosis. These lines or indications are such as the rarely-found *uncomplicated* tubercular infection, the chronic state, and the existence already of favorable resistance in the patient's blood to tubercular invasion.

The diagnosis of tuberculosis by tubercular injections is now a generally admitted fact by a larger number of physicians than those who favor its use in treatment, and the extended use of tuberculin by veterinarians to determine tuberculosis in cattle is confirming the desirability of this procedure. Thus far the writer has made twelve positive diagnoses of human tuberculosis almost solely by this means.

There are, however, some surgeons, like Dr. Senn, of Chicago, who do not recognize any value in the remedy. It is for such and other doubting minds that these cases of joint and bladder disease are here submitted. They are such as can not be explained away by the argument of climatic effect, and as for other medical treatment, very little or none was used; and I am firmly convinced that the results obtained should be credited to the new method of cure.

The case of tubercular cystitis first described is unique in the experience of the writer, and as this patient's business (auditor of the Bell Telephone Company) has called him to every prominent city in the United States, he has consulted and much interested many physicians and surgeons. He has been examined from time to time by Dr. C. A. Powers, who verifies the condition and the improvement.

Case I.—H. C. B., of Dedham, Mass., aged fifty-four years, widower, was first seen at Denver, on January 16, 1895. In 1884, after three years' sickness, his wife died of consumption in the South, where they were living because of Mr. B.'s failing health. There is a possibility of her having been infected with tuberculosis from him, because in 1878 he had throat trouble, was confined in the house a month, was much run down, and went South. In 1879, after his return to Massachusetts, he got weak again, and his doctor sent him South to reside. Weight then, a hundred and twelve pounds. Had a cough and yellow expectoration. Resided in Aiken, S. C., from 1879 to 1886. Had been a soldier in the army at the time of the rebellion, and from then till a year ago had great pain at times in his left kidney, said to be "gravel." He took morphine only from doctors until last August, when on leaving the hospital, where he had been under treatment some three montns, he took himself about a fourth of a grain a day, and now sometimes reaches three fourths of a grain. He suffered great pain in his bladder and did no work from June 6 to November 30, 1894, and came to Colorado January 15, 1895, not appreciating the elevation by any effect upon his lungs. Had had night sweats before going South, but never any hæmorrhages or profuse expectoration. Weight at best, a hundred and sixty pounds in 1890; at lowest, a hundred and twelve in 1879; now a hundred and forty pounds. In the army he had diarrhœa; now his bowels are inclined to be loose. Has no expectoration or cough. Sleep is much disturbed, and he suffers at times with severe pain in his bladder. While under Dr. Cabot's treatment in Boston a few tubercular bacilli were found in his urine, after many trials, in October, 1894. In Denver we have found two to many fields examined. Pulse, 72; respiration, 18; temperature, 98° F., at 11 a. m. Spirometrical record two hundred and ten cubic inches; manometer eighty millimetres. Physical examination shows the lungs to be in fair condition, there being only slight dullness at the left apex, with some broncho-vesicular respiration there. However, subsequently, under the tuberculin treatment, from a ten-milligramme dose to seventy and above, continued reaction sounds were noticed in the lower half of his left lung both front and rear. The urine was thick, cloudy, of high specific gravity, and contained pus and sometimes blood. It was voided with great frequency, sometimes as often as every twenty minutes during the night and every five to ten minutes in the daytime, and his attacks of pain were very severe. In washing out the bladder he could hold only two ounces of fluid, and always asked to be permitted to relieve himself on arrival at the office.

The diagnosis of tubercular cystitis, with probable latent (healed) trouble in the left lung and perhaps in the bowels, was fully confirmed by the reactions to the tuberculin treatment, which was urged upon him by the writer. The first dose—four milligrammes of Koch's tuberculin—was given him February 14, 1895, and by various degrees of increase and intervals of administration eighty milligrammes were reached, when he went to Salt Lake on business for three weeks. The reactions had been positive, though more general than febrile; a temperature of 99·5° F. was reached several times, and twice he felt so badly that he was unable to take the next dose for three days. But good effect, always in due time, succeeded these reactions.

The diagnosis was positive at the ten-milligramme dose, when the lung reaction was marked—*i. e.*, the high-pitched, harsh, broncho-vesicular breathing sound was noticed over the left mammary and inferior scapular regions, which the writer has found to be the peculiar effect (in the tubercular lung) of this toxic or antitoxic influence. Later the diagnosis was also positive in the backache and distress in the neck of the bladder which succeeded the injections of larger doses—thirty to seventy milligrammes. And later on still the original diagnosis was further confirmed by the diarrhœa which was seemingly caused at times by larger doses—a hundred and sixty to a hundred and eighty milligrammes. The improvement in the bladder was, however, as might be expected, more noticeable after the larger doses—*i. e.*, above fifty milligrammes. Gradually the urine became clearer, was voided much less often—every two hours—and in larger quantities. By the time the eighty-milligramme dose was reached he had reduced the morphine taken three fourths, and some days after left it off entirely. He gained in weight, spirits, and looks.

Though half a dozen trials have been made with different specimens of his urine, no bacilli have been found since the treatment was well under way.

April 15, 1895.—The following note is appended to his record: "Was over in Salt Lake three weeks, and since his return has gone on with the tuberculin injections up to a hundred and thirty milligrammes to-day. Urinates only five times during the night. Weight in Boston, a hundred and thirty-five pounds, now a hundred and forty-two pounds. Looks and feels much better."

May 3d.—Took injections up to a hundred and seventy milligrammes every other day to date. Urine contains no bacilli, but streptococci are present. Feels better to-day than any day since last June.

21st.—Has been taking the injections every four days of late. Reactions have been slight. Weight, a hundred and forty pounds, a gain of six pounds since March 8th. Looks and feels better. Less frequent micturition, and no bacilli found at this time in the lessened sediment. Thinks he must return East on his business. He will continue the tuberculin injections with lengthening intervals and report progress.

In our next case, that of tubercular hip-joint disease, we have the advantage of a longer term of observation:

CASE II.—Miss M. S., aged twenty-three, who came to Colorado in 1881 and has resided in Fort Collins, was first seen on August 13, 1894. She is the youngest of thirteen children, only six of whom are living. The mother at sixty-five looks sallow and emaciated, and appears not to have been well for thirty years. Latent tuberculosis is suspected. She was said to have had "dropsy of the liver," and, what was peculiar, six of her children were jaundiced and died under two weeks of age. This patient was never strong as a child. She had typhoid fever six years ago. She seemed to be well, when four years ago she fell into a basement and struck on her right hip. She gradually became affected with hip disease, so that she could not walk by the next May. She was in bed six months with a weight on her right limb and wore a brace for two years. Walked, if at all, with two crutches for three years and now uses one. Has had sore throat every winter for five or six years, and this is worse now. Coughed all winter for three winters and raised sputum at times. Coughs less now. She has no night sweats or profuse expectoration, but there was some bloody expectoration from the throat last winter.

Weight at most before the accident, a hundred and fifty-five pounds; now, a hundred and twelve pounds. Expectoration very little. None could be obtained for examination. It is doubtful if there are any bacilli. Pain in hip; appetite fair; digestion negative for meats and fats; bowels regular and catamenia scanty. Leucocytosis imperfect, as shown by paucity of leucocytes in the blood, and most of these are granular, swollen, or broken. Lips and finger-nails blanched, and hæmoglobin evidently deficient, though not exactly determined. Pulse 104, respiration 26, and temperature 99° F. (10 A. M.). Spirometrical record a hundred and forty cubic inches; manometer, forty-five millimetres. Pharynx shows elevations which make us suspicious of tuberculosis. Chest expansion twenty-eight to thirty inches and a half—about equal on the two sides. Physical examination not very positive. Bronchial characteristics slightly extended. "Cog-wheeled" respiration to the right of and above the base of the heart, and prolonged expiration and broncho-vesicular breathing to the left, with slight dullness at the apices. The changed voice and breath sounds, though slight, centre around the borders of the inner apices front and rear, which, with the suspicious laryngeal and pharyngeal state, are strongly indicative of tuberculosis. Decided on the diagnostic test with tuberculin, and the proposition was at once accepted. Two injections of one and one and a half milligrammes of Koch's lymph left no doubt as to the character of the case. The constitutional effect was characteristic and remarkable. The prostration at the second treatment was so great that she fainted in the office, and afterward a temperature of 103° F. was reached.

One week later, September 11, 1894, steady treatment with the same remedy was commenced, going back in dose and increasing very cautiously. The following notes are from the record:

October 28th.—Have worked up to eighty milligrammes, and reaction breath sounds were and are considerably diffused. There have been distinct effects in the throat and hip in response to the larger doses. She can walk easier and her hip is better. There have been some cheesy deposits in the elevations on the tonsils, but her throat now looks much improved. Blood condition is decidedly better, and no fever reactions follow the large doses.

November 10th.—Worked up to a one-hundred-and-thirty-milligramme dose to-day. Weight, a hundred and eighteen pounds. Is gaining.

December 18th.—Weight, a hundred and nineteen pounds and a half. She has been taking a one-hundred-and-thirty-milligramme dose each week for five weeks, and goes back to Fort Collins after treatment. Feels better and can walk without a crutch.

January 9, 1895.—She has been taking a hundred and ten to a hundred and thirty milligrammes of tuberculin about once a week. Comes to the office without her crutch. Has gained to a hundred and twenty-five pounds weight.

March 5th.—Weight, a hundred and thirty-one pounds and a half, a gain of twenty-one pounds and a half since October.

April 23d.—Comes about every ten days from Fort Collins and takes a hundred and twenty milligrammes. There are no reactions and improvement continues. She has discarded her crutch entirely and limps very little. She can step up a stair, using the foot of the lame leg first, which she has not been able to do for four years. Last week Dr. C. A. Powers kindly examined the patient and confirmed the diagnosis of tubercular hip-joint disease. The prognosis is thought to be excellent; the supposed difference in the measurements on the two sides is found to be due to the tilting of the pelvis. Weight now a hundred and thirty-three pounds. Muscular strength comes back slowly, but the general improvement is decided.

Case III.—L. J. G., a man, aged twenty-two years, telegrapher from New York State.

October 7, 1893.—Arrived yesterday. A sister died of hip disease and a brother was operated on for abscess of the hip and recovered. Six years previously this patient had strained his right hip and has been a cripple for five years. On September 28, 1889, Dr. Roswell Park, of Buffalo, operated on this hip for an abscess (resection?) and some benefit resulted for eighteen months. The abscess returned in the same place, and Dr. Park operated again in October, 1891. In January, 1892, a sinus formed opening into the right groin; also one in the right nates. These are still discharging. Dr. Park, finding numerous bacilli in the sputum, relinquished his intention of again operating and sent the young man to me. I found the right lung in the first stage with bronchiectasis, and the left in the second stage of tubercular disease. The whole left upper lobe being involved, and with his hip discharging a drachm or more a day and exercise impossible, I could not see how the climate here could meet the conditions. The case was to me hopeless, unless some immunity could be produced. He had night sweats and profuse expectoration—now two ounces—thick and yellow, containing many bacilli "to the field." Pulse, 96; respiration, 24; temperature, 102° F. (3 P. M.); spirometrical record, a hundred and thirty-five cubic inches; manometer, forty millimetres. Weight in health, a hundred and forty-two pounds; now, a hundred and twelve pounds.

10th.—Tuberculin injections were commenced very gradually at first, because of the double infection and extreme susceptibility.

April 10, 1894.—The record states how a dose of sixty-five milligrammes of tuberculin has been gradually reached and that some reactionary sound is still appreciable at the base of the right lung, rear and apex of the left front, where, over the left bronchus, there is yet almost "cracked metal" on stethoscopic percussion and mucous râles on coughing. But the bacilli have evidently been driven from the sputum, which is one half reduced in quantity. The discharge from the hip is very little indeed; strength much increased; color better; and weight, nearly a hundred and eighteen pounds; in fact, general improvement. His temperature has gradually decreased under the treatment.

September 4th.—The patient has been out on a ranch near Morrison and has taken no medicine during the summer. About August 1st he caught cold and had high fever. Some fever yet—101° F. Weight, a hundred and eighteen pounds; looks better, bowels regular, and appetite good; expectoration lessened three fourths, manometer and spirometer records increased. Measurements of chest increased from twenty-nine and thirty-two inches on arrival to thirty and thirty-three inches and a half now. Slight dullness and some mucous râles on coughing still remain at the apices front, especially the left.

January 19, 1895.—Have increased the dose of tuberculin given every four to six days up to a hundred and thirty milligrammes at highest, and the control of the temperature rise, which was to 102° F., has been beautifully illustrated by his progress since the commencement of this second series of injections. The general improvement has been decided. His chest sounds are much drier; spirometer record, a hundred and fifty cubic inches; and manometer, ninety millimetres; a decided gain. Weight, a hundred and nineteen pounds.

His improvement continued after this, and what was remarkable, his temperature remained nearly normal for months. His low financial state and inability to get suitable work have been discouraging. Contrary to my advice, he went back East in May. His condition, however, was favorable—more than simple arrest of the disease. He has a certain degree of immunity to rely on.

In the face of such evidence as this* (and with proper discrimination, the use of tuberculin in *pulmonary* tuberculosis has as good a defense), and in the presence of a patient who declares that the authorities of a certain place where he has been, urged by certain local physicians, have sought to interdict the use of tuberculin at all, the writer must express his chagrin for the unreasonable fear and prejudice of some of his profession. He feels justified in saying that one such case as the second here given is worthy of more credence than a hundred failures by others who as likely as not have not appreciated the remedy or the conditions under which it should be used.

The writer trusts his own course has been consistent since four years ago in the Denver Medical Association he demonstrated an immunity or healing principle contained in tuberculin, announced the discovery of the peculiar reactionary breath sound due to the healing process in tubercular-affected lung tissue, and declared that even should the medical fraternity decide against the use of tuberculin he would continue himself to use it, or some of the to-be-discovered derivatives of it, in his practice. Ever since that time, when the writer has been at home in Denver, he has used the drug and found ample justification in this positive, though sometimes necessarily more or less transitory, immunizing influence.

Of one hundred and thirty or more patients treated, all but one of thirty-three *without softening* (excluding a few of whom traces have been lost) are known to be living, and forty-five out of ninety seven who had reached or passed the stage of softening in lung tissue are also known to be living, of whom twenty-seven are favorable results in single- or double-cavity cases.

It should be understood as quite possible that unjust and unwarrantable explanation of assumed unfavorable results of tuberculin treatment in certain cases may be made. Perhaps that can not be wholly avoided under existing conditions, but if a reference to patients were the desirable procedure, the writer could name quite a number who now, even after several years, enjoy something of the immunizing influence conferred upon them by tuberculin. But how would the reader judge and what would he do with the voluminous records of their examination and lives? He is already tired out, no doubt, with this presentation, which is respectfully submitted with the regret that so large a subject should be limited to so small a time for its consideration.

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* For description of other interesting cases, including one of chronic tubercular meningitis and another of tubercular knee-joint disease of long standing, see Diagnosis of Tuberculosis by Tuberculin Injections, *New York Medical Journal* of February 3, 1894.

DIPHTHERIA ANTITOXINE

IN PRIVATE PRACTICE, WITH REPORT OF CASES.

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THE following observations, based upon the study of thirty-four cases of diphtheria occurring during a recent epidemic of the disease, are of a purely clinical nature. So much has already been said from the theorist's point of view, both regarding the pathognomonic nature of the Klebs-Loeffler bacillus and the curative qualities of the antitoxine serum in cases of true diphtheria, that results based upon careful clinical observations are at this time of more immediate and practical interest to the ordinary physician.

The cases here reported occurred during a recent epidemic of the disease in the adjoining suburbs of Highland Park and Highwood. Serum therapy was employed in those cases only which developed a malignant type of the disease. This was owing to the financial expense incurred by its use and the limited means of the families in which the disease occurred:

CASE I.—O. B., aged eleven years, complained of lassitude and severe headache for two days. Both tonsils, pillars of fauces, uvula, and posterior wall of pharynx completely covered with dense, yellowish membrane. Breath very fœtid. Seropurulent discharge from nares, slightly sanguinolent at times. Cervical glands greatly enlarged and indurated. Ordinary treatment was employed for twenty-four hours, during which time the patient's condition grew progressively worse. At the end of this time the child lay in a state of profound prostration, urine and fæces being voided involuntarily. The patient could be roused with great difficulty, and was apparently insensible to the introduction of the needle when being inoculated. Temperature at the time of first injection was 103°. Fifteen centimetres of antitoxine were given at this time, and ten more were introduced twelve hours later. At the end of twenty-four hours marked improvement was noticeable, which continued until perfect recovery ensued. Slight pharyngeal paralysis occurred two weeks later, which was of no other importance than that it served to sustain the original diagnosis of true diphtheria.

CASE II.—S. B., aged seven years; brother to preceding patient. Disease manifest three days after its inception in the sister's case. Pharyngeal, nasal, and tonsillar type. Case almost identical in character with preceding one, excepting that septic symptoms were less severe. Antitoxine was employed in slightly reduced doses. Recovery apparently perfect.

CASE III.—C. B., aged seventeen years—an older sister having charge of the others. Disease limited locally to both tonsils and accompanied by but slight constitutional symptoms. Ten centimetres of antitoxine were given at once, and no other treatment employed. Complete disappearance of all local symptoms at the end of twenty-four hours.

CASE IV.—A. R., aged five years; residing in house adjoining that occupied by preceding patients. Headache, lassitude, and vomiting for twenty-four hours; temperature, 104°. Both tonsils were densely covered with false membrane which faded out over pillars of fauces and uvula. Constitutional depression was slight, and patient made an uneventful recovery without resort to serum.

CASE V.—B. R., aged ten years; sister to preceding patient. Disease ushered in with somnolence, headache, and delirium, accompanied by a temperature of 105°. Both tonsils covered with false membrane, with rapidly developing enlargement of cervical glands. Antitoxine was not used in this case, which under ordinary general and local treatment went on to a satisfactory recovery.

CASE VI.—G. R., aged three years; brother to preceding patient. In this case constitutional symptoms were present to a marked degree. Temperature, 103°. Tonsils and pharyngeal walls were covered with false membrane; also marked involvement of nares. Soft tissues about the eyes very œdematous. The peculiarly bloated appearance of the face in this case was due entirely to the intensity of the neighboring nasal lesions and not to nephritic complications, since repeated analyses of the urine gave practically negative results. General depression was marked, but not profound. Antitoxine was not used at this stage, for the child's condition did not appear to be growing worse, and later, recovery was looked upon as assured, when, on the tenth day of the disease, a sudden recurrence of all the symptoms occurred with increased severity. The patient's condition became rapidly one of profound sepsis. Two injections of antitoxine were given twelve hours apart, with a continuation of local treatment and active stimulation. Recovery, somewhat tedious, resulted.

CASE VII.—W. V., aged six years, living in adjoining house, contracted the disease two days subsequent to G. R.'s attack. In this case local manifestations were limited to the tonsils and posterior pharyngeal wall. Constitutional symptoms were almost entirely absent. Recovery followed ordinary treatment.

CASE VIII.—R. V., aged four years. This case proved almost identically similar to the preceding one, and occurred in the same family. Both children, although presenting marked local symptoms, continued to play about the floor and eventually recovered, having presented no alarming symptoms.

CASE IX.—H. V., aged seven years and six months; sister to the preceding patients and ill at the same time. Local lesions appeared first upon the right tonsil, spreading with great rapidity over the pillars of the fauces and opposite tonsil. General depression was slight, and at the end of five days exfoliation began. At this point, when convalescence was apparently established, membranous formation occurred within the nares and sepsis rapidly supervened. Owing to prejudice on the part of the child's parents, serum therapy could not be employed in this case, and, although the child's life had been absolutely despaired of, she finally recovered under enormous doses of alcohol.

CASE X.—M. S., aged four years, living near preceding case. The child's parents were densely ignorant, and, as a consequence, medical aid was not summoned until the patient was moribund. Owing to the hopelessness of the case, no treatment was instituted, the child dying one hour after the first visit. The history of the case and the condition of the patient left no doubt as to the nature of the disease.

CASE XI.—F. McD., a girl, aged six years, was taken ill simultaneously with the four preceding cases. Disease first manifest locally on the right tonsil (having been preceded for several days by mild constitutional disturbances) and spread rapidly to the nares. Despite all local and general treatment, sepsis became profound at the end of three days, the patient succumbing on the fourth. Antitoxine was not used in this case, owing to delay in securing it.

CASE XII.—L. McD., aged four years, sister to preceding patient, contracted the disease the day after her sister's death. In this case the nasal form occurred, and a septic condition immediately followed. Her condition, as nearly as could be judged, was fully as grave as that of her sister. Antitoxine was obtained and the patient inoculated when, it must be confessed, all hope of her recovery had been practically abandoned. Following the second injection improvement became marked and a tedious recovery ensued. The author considered this case a truly remarkable one.

Cases XIII, XIV, XV, XVI, XVII, and XVIII were of no special interest. In the first four, serum inoculations were employed. In none were septic or laryngeal symptoms marked. All occurred in one family, and, so far as could be ascertained, none were modified by treatment. All recovered.

Case XIX.—M. G., a girl, aged three years, was ill two days with severe headache and fever before the disease was recognized. At this time a membranous formation was discovered within the nares, accompanied by a fœtid discharge. As there was marked constitutional depression, one inoculation was given. Improvement was noted at the end of twenty-four hours, which continued until perfect recovery resulted without recourse to other treatment.

Case XX.—I. G., aged six years; brother to preceding patient. Disease limited locally to tonsils and pillars of pharynx. This case was unusual in that the patient suffered from persistent vomiting and an inability to retain either medicine or nourishment of any nature during the first five days of his illness. Recovery followed an extremely tedious convalescence.

Case XXI.—G. G., aged three years; twin brother to the subject of Case XIX, and taken ill three days later. This case was marked by an abundance of membranous formation over the tonsils and pharyngeal walls, and was accompanied by a temperature of 105° during the first twenty-four hours. On the third day symptoms of laryngeal obstruction appeared, and at this juncture an inoculation of serum was given, followed by a second fifteen hours later. Four hours subsequent to the second injection, the child's breathing improved, and the somnolence which had been present disappeared. Recovery followed, complicated by slight pharyngeal paralysis of short duration.

Case XXII.—N. G., aged twelve years, sister to preceding patients, had a slight form of the disease during the convalescence of the others. Membranous formation was present over both tonsils, with but slight constitutional disturbances. A rapid recovery followed without the use of antitoxine.

Cases XXIII, XXIV, XXV, XXVI, and XXVII were all mild in character, occurring in one family and resulting in recovery. None were considered serious enough to require the use of serum.

Case XXVIII.—J. McD., aged about forty-five years, father of the patients in Cases XI and XII, was taken ill the day following F. McD.'s death. Temperature, 104°; tonsils and pillars of fauces covered with membrane; severe headache, somnolence, and delirium. Fifteen centimetres of antitoxine were given on the first day and repeated twelve hours later; improvement followed the first injection and the case went on to recovery.

Cases XXIX, XXX, XXXI, and XXXII were uneventful, ordinary treatment being followed in all, and all ended in recovery.

Cases XXXIII and XXXIV occurred in one family; the first was mild in character and ended in recovery without the use of serum. The second, that of J. B., aged one year and six months, was of the laryngeal type almost from the beginning of the disease. Tracheotomy was performed, which prolonged life for three days, at the end of which time septic symptoms appeared and the child died. Serum therapy was not employed in this case as the true nature of the disease was not recognized in time.

The remaining six cases were all light in character, occurring in one family, and all ended in recovery. Antitoxine was used in none.

In summing up conclusions regarding these records, we must, of course, recognize the limited number in which serum therapy was employed, the number of recoveries without its exhibition, and the character and severity of the individual cases. This report may prove of some value by simply adding to the number of cases already recorded in which antitoxine has been employed, for only when a large number of cases have been gathered from private as well as hospital practice can we hope to arrive at definite conclusions as to the actual value of any of the newer remedies in the field of therapy.

The author has endeavored to exclude from these records all cases which admitted of a doubt as to their genuineness; only those which bore unmistakable clinical evidences of true diphtheria have been admitted.

Clinically observed, several somewhat prominent features were noted which appeared with tolerable constancy in all cases in which antitoxine was employed. In the first place, no appreciable amelioration of symptoms, either general or local, was discoverable during the first twelve hours subsequent to the first inoculation; following the second, however, improvement was generally noticeable—in a majority of cases, in a few hours.

The constitutional symptoms were in all instances the first to show signs of mitigation, which was usually indicated by a decline of temperature, disappearance of lassitude, and an awakening interest on the part of the patient. Following this general improvement, it certainly did appear that in some of the cases the local developments were directly influenced by the treatment; in three cases at least, the extension of membrane appeared to have been arrested and in several others retarded in its formation. In four cases there was reason to believe that exfoliation was hastened; but, on the other hand, in three equally favorable cases there was absolutely no reason to believe that any effect had been produced upon the disease either locally or constitutionally. One point which may prove of some value, and which impressed the author, was that the most definite results in using antitoxine were obtained in septic cases—cases where the disease had invaded extensive areas, and where symptoms of septic absorption were well marked.

In this connection one case in particular is worthy of especial mention, that of L. McD. (Case XII). This little patient lay in a state of profound sepsis at the time of inoculation; her features were swollen beyond all recognition, and she was apparently unconscious of her surroundings. From both nares there was a continuous discharge of such intensely fœtid odor that a part of those present were driven from the room; she was oblivious of all surroundings and made no attempt to swallow liquids when placed within her mouth.

This patient was momentarily expected to die during the night, but survived, and fourteen hours subsequent to the first injection showed signs of improvement. This recovery was certainly the most remarkable ever observed by the author.

The degree of advantageous results from the use of serum in ordinarily severe cases in private practice would be very difficult to determine, for the reason that here these patients are seen much earlier than in hospitals, and a far greater proportion of them recover under ordinary lines of treatment. In fact, the appalling mortality records given out from public and charitable institutions in connection with this disease are frequently a source of surprise to the private practitioner, who is accustomed to meet these cases under more favorable circumstances.

Occasionally, however, even under the best of conditions, we meet those graver types accompanied by laryngeal or septic complications, where we resort to all our therapeutic and surgical armamentarium in vain, and in these cases we are best prepared to determine the relative value of antitoxine as compared with other methods of treatment.

In the cases here reported the serum treatment was, as has been stated, reserved for the most serious conditions: those patients in whom the disease manifested a progressive course and where, with few exceptions, there were already present well-marked septic symptoms. In none of the cases where serum therapy was employed was there a death, while the only other severe cases all resulted fatally; one of these, however, died without having received medical assistance of any kind.

Regarding the untoward effects of the antitoxine in these cases it may be stated that they were practically absent. In two instances, on the third, fourth, and fifth days, a distinct erythematous rash appeared, and in one a diffuse cellulitis, extending over the entire abdomen and accompanied by a rapid rise of temperature, occurred on the second day. None of these complications were of sufficient gravity to excite apprehension, and the author observed none of the more serious complications and sequelæ, such as septic pneumonia, metastatic abscesses, and other manifestations of toxæmia observed by some and attributed to the deleterious action of antitoxine serum on the blood tissues. In one case (II), two weeks subsequent to the inoculation, the child's mother called my attention to the appearance of the urine, which was of a milky color and deposited a heavy sediment upon standing. An analysis showed a trace of albumin, together with a great excess of phosphates—the urine becoming normal, however, at the end of three days.

In conclusion, the author wishes to state that the cases here reported all occurred in a single epidemic of the disease, covering a period of less than two months, and, while in each case the diagnosis was not confirmed by bacteriological examination, the clinical appearances were of so distinct a type as to leave no room for error. It is not the purpose of this paper to enter into a discussion of the relative merits of antitoxine as a specific in the treatment of diphtheria, but simply to place on record clearly and briefly these results, refraining from comment of any nature not pertaining to the actual facts brought out in the report, leaving it to each one to formulate his or her own ideas regarding the benefits derived in each case.

July 5, 1895.

TWO CASES OF SARCOMA OF THE TONSIL:

DEATH FROM LIGATION OF THE CAROTID IN ONE; RECURRENCE AND DEATH IN THE SECOND.

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Sarcomata of the tonsils are so comparatively rare that a short report of two cases in my own practice is worthy of publication, especially since one of the patients died of anæmia of the brain due to ligation of the common carotid. The rarity of malignant tumors of the tonsils may be inferred from the statement of Mackenzie that examination of eight thousand two hundred and eighty-nine cases of tumors of the tonsils showed only three of malignant character. Warren, however, in his recent work on *Surgical Pathology*, states that "Sarcoma of the tonsil is a much more common disease than is generally supposed. In Boston quite a number of operations have been performed for this affection," and he mentions four cases by Cheever, and one each by Homans, Richardson, Porter, and himself. Newman, of Glasgow, collected fifty-two cases of sarcoma of the tonsil reported up to 1892.

Since the date of publication of his paper (May, 1892) reports of cases have appeared as follows:

O'Hara, of Melbourne, Australia (*Australian Medical Journal*, August 15, 1892), records one sarcoma successfully extirpated with knife and thermo-cautery through an external wound; but the patient died four years later from sarcoma of the lung.

Gardner, of Adelaide, Australia, operated in one case (*Australian Medical Journal*, June 15, 1892), with recurrence in the axilla in one year.

Luc (*Journal of Laryngology*, London, July, 1892) had one case of lympho-sarcoma (round-celled sarcoma) (*Annual of Universal Medical Sciences*, 1893, vol. iv, section E, p. 8).

E. Fletcher Ingals, of Chicago (*New York Medical Journal*, December 10, 1892), treated a case with parenchymatous injections of lactic acid, using 0·32 cubic centimetre (five minims) of a twenty-per-cent. solution, gradually increased to fifty per cent., and the local application of a sixty-per-cent. solution, with a good effect but no cure.

Aunis, of Bordeaux, gives a fatal case (*Journal de médecine de Bordeaux*, February 5, 1893).

Lermoyez, of Paris (*Annales des maladies de l'oreille, du larynx et du pharynx*, Paris, May, 1893), records a single fatal case.

J. Dunn, of Richmond (*New York Medical Journal*, August 11, 1893), also reports a case.

Norris Wolfenden, of London (*Journal of Laryngology*, August, 1893), had a recovery in one case by removal with the galvano-cautery snare; three operations were necessary to complete the cure.

MacIntyre, in the same number of the same journal, relates another successful case (*Annual of the Universal Medical Sciences*, 1894, vol. iv, section D, p. 69).

To these I may add the brief history of two cases which have occurred in my own practice.

CASE I.—Mrs. Lydia S., of Burlington, Kan., patient of Dr. Manson, fifty-six years of age, appearing much older than her years, was sent to me on August 12, 1892. About nine months before this date she noticed the right tonsil becoming enlarged; after a time, as it increased in size, she became anxious about the matter and consulted Dr. Manson, a surgeon of much repute and large experience. At this time there was nothing in the local appearance to suggest malignant disease, the tonsil simply being enlarged, red, and slightly glazed. Since it continued to grow, the doctor removed the tonsil and some of the surrounding tissue on April 13th. It immediately recurred, and had grown so rapidly that at the time of my examination the tumor projected far into the pharynx, nearly occluding the passage, and presented as a mass some three inches by four inches in size behind and below the angle of the jaw. For about a week a paralysis of the right side of the face had been present, since which pain had been severe, though there had been none previously. I gave a diagnosis of sarcoma; prognosis, fatal; advice, operation as giving the only chance of life—though with but faint prospect of recovery.

August 15th.—I made a preliminary tracheotomy with much trouble. She did well during the operation until the tube was inserted in the trachea, when there was a spurt of blood and mucus and then complete cessation of respiration, though there had been no trouble up to that moment. I found the tube perfectly free and so blew in it strongly twice. This producing no effect, I again swabbed out the tube and tickled the trachea with a feather. Still there was no response, and the outlook was dubious. Artificial respiration was instituted, but it was not until the end of twenty-seven minutes that a voluntary respiratory effort was noted; soon she breathed without assistance and quickly regained consciousness. She stood the tube well, with no irritation, the next three days, becoming quite accustomed to it, and breathing better than she had through the swollen throat.

18th.—With the help of Dr. Kuhn and Dr. Thrush, I made an incision from the zygoma to a point near the chin along the line of the jaw, and another at nearly right angles to below the mastoid. Then, clearing the bone, I drilled it at two places, and sawed through between the holes at a point near the symphysis mentis, and dissected the bone out with its important muscular attachments intact, turning it upward and outward out of the way. The parotid and submaxillary glands were next removed, practically without hæmorrhage, and the sarcoma was attacked. The pharynx having been stuffed with gauze, I divided the soft palate and cleared it from its attachment to the bone, and then extirpated the tumor from without, beginning above and carefully dissecting downward with scissors. The hæmorrhage was quite free, but easily controlled by hæmostatic forceps, so that comparatively little blood was lost. Just at the completion of the work of removal the anæsthetist asked for haste, as the patient was not breathing well; so, fearing a repetition of the scene at the tracheotomy, I pulled the mass strongly outward and downward and quickly clipped away its lower attachments, at the same time cutting through the internal carotid artery, the external having already been tied just above its origin. The hæmorrhage was frightful for an instant, but large artery forceps at once arrested it. I hastily checked oozing, wired the jaw back into its place, and sutured the upper part of the wound; then I ligated the common carotid at its point of division, leaving the forceps on the vessel above, as I was not quite sure of my ligature of catgut, and there was too much necessity for haste to allow a second one to be passed. The wound was tamponed with gauze, and the patient put to bed.

She rallied promptly from the operation, the pulse becoming strong and evidences ock disappearing. But she did not regain consciousness, and it was soon seen that she had complete left hemiplegia. Evidently the circle of Willis was not allowing the collateral circulation to become established, and this became more clearly manifest as time progressed. Symptoms of partial anæmia of the brain were unmistakable. Although she lived something less than seventy-two hours, she never regained consciousness. An autopsy was not permitted, so I can not say why the collateral circulation was not established.

Examination of the tumor showed it to be round-celled sarcoma.

CASE II.—Mr. M., of Leavenworth, Kan., I saw with Dr. J. H. Mooney, August 3, 1891. He was sixty-three years of age, of excellent family history, and of previous good health. About April 1, 1891, he first noticed a swelling of the right tonsil, but without much soreness. The tumor continued to grow rapidly. A week before my examination he was attacked with a pharyngitis, from exposure, which led him to consult the doctor, who at once suspected malignancy. When I saw him there was still a considerable inflammation of the pharynx, with an enlargement of the glands on that side of the neck (superficial lymphatics), purely inflammatory in character. The mass felt very hard, and the soft palate was red and somewhat tender; the fauces were much injected. I made a diagnosis of sarcoma, and advised removal as soon as the inflammation should subside. A gargle of boric acid with thymol in glycerin and water was ordered. On the 6th the inflammation was much better and the enlarged glands were reduced fully one half in size, though the affected tonsil remained unchanged. As the patient would not consent to enter a hospital and have the radical operation done from the outside, I removed the mass through the mouth in a private house. The immediate effect was good, but the tumor began to grow again in a few weeks and soon terminated his life, his death occurring late in the autumn of 1891.

Examination of sections of the tissue removed gave unmistakable evidences of spindle-celled sarcoma.

There are doubtless quite a number of other recent cases not recorded. There seems to be a reluctance to publish such cases, especially when the results, as in my work, are neither sarisfactory to the operator nor complimentary to his skill; yet, as Delavan, of New York, says (*Annual*, 1893): "The need for full information concerning them is pressing, and it is hardly too much to say that the withholding of it is a disgrace to surgery."

A table of all cases reported as treated prior to August, 1893, gives a total of seventy-one cases, as follows:

TABLE OF SARCOMATA OF THE TONSILS.

	CASES
Newman's collection	52
O'Hara, of Melbourne	1
Cheever, of Boston	4
Homans, of Boston	1
Richardson, of Boston	1
Porter, of Boston	1
Warren, of Boston	1
Gardner, of Adelaide	1
Luc, of London	1
Ingals, of Chicago	1
Aunis, of Bordeaux	1
Lermoyez, of Paris	1
Dunn, of Richmond	1
Wolfenden, of London	1
MacIntyre	1
Lanphear, of St. Louis	2
Total to August, 1893	71

2312 SALISBURY STREET.

THE THERAPEUTICS OF METHYLENE BLUE,

WITH SPECIAL REFERENCE TO ITS EMPLOYMENT IN URETHRITIS.

BY WILLIAM J. ROBINSON, PH. G., M. D.

IN the *New York Medical Journal* for June 15, 1895, there appeared a report by Dr. Austin Flint of a case of *Filaria sanguinis hominis* successfully treated by methylene blue. At the conclusion he relates his experience with the use of the drug in gonorrhœa, in which disease it has in his hands proved highly successful. Though quite extensively employed in some European countries, this drug has had a comparatively limited use in this country; but, taking into consideration the influence of Professor Flint's name, and the wide circle of readers of the *Medical Journal,* it will not be surprising if many physicians are induced to try this drug in different diseases, and especially in gonorrhœa, which is often obstinate enough to baffle the skill and exhaust the patience of our best men, and it is for the specific purpose of emphatically warning the profession against the employment of this drug that I am induced to give my experience with it.

Before I do so, I want it to be distinctly understood that all reports about methylene blue—mine, which follow below, included—must be taken with some mental reservation, *cum grano salis;* the simple but important reason being that methylene blue varies so widely in composition, and other aniline compounds are so frequently substituted for it, that we can seldom be sure as to what particular substance is under consideration—to what compound to put the blame or credit for certain beneficial or disastrous effects. Why it should be so with methylene blue more than with any other chemical I do not know, but it is a fact, as will be seen presently.

Methylene blue is, as is well known, the hydrochloride of tetra-methyl-thionine, but, as found in commerce, it is frequently a double chloride of zinc and tetra-methyl-thionine, besides containing as impurities lead and arsenic, as can be easily demonstrated by making a solution, filtering, and passing a stream of sulphureted hydrogen, when the metals will be precipitated as sulphides. As regards substitution, the substance I have found most frequently substituted for methylene blue, and *vice versa,* is methyl violet (blue pyoctanin). Some time ago a friend was treating a case of carcinoma mammæ by painting around with a solution of supposed methylene blue and was very gratified at the results. It afterward proved that he had been using right along a solution of methyl violet, and only a few days ago I ordered a two-per-cent. solution of pyoctanin blue for a case of varicose ulcers and methylene blue was dispensed instead, the druggist explaining to me that he was sure it meant the same thing.

In the *Medical Record* for August 26, 1893, Dr. A. Rose reports some cases of diphtheria treated very successfully with methylene blue, concluding with the remarkable statement that methylene violet was dispensed on his prescriptions instead of methylene blue, and that to his knowledge such errors have occurred elsewhere. To what remedy then is credit due, to methylene blue or violet?

With regard to my experience with methylene blue in gonorrhœa, although not large, it has been sufficient to convince me not only of its utter worthlessness, but of its positive injuriousness. Of the eleven cases of specific urethritis that I treated with that drug, four were chronic, of from six months' to three years' duration, and in those four the drug did not exert the least influence for good; in two of them all the symptoms became aggravated, the discharge increasing, the urine assuming a burning character, etc.

Of the seven acute cases one was markedly benefited. This patient presented himself for treatment ten hours after exposure and two hours after noticing a slight discharge. He was given a saturated solution of boric acid as an injection and methylene blue 0·12 three times a day. On the sixth day the discharge was completely stopped. In two other cases it seemed to act beneficially, but, as it was given in conjunction with other antiblennorrhagics, the results are, of course, doubtful.

In the other four cases the effects were perfectly disastrous, assuming in two such an alarming aspect that it seems to me worth while to relate them in detail:

CASE I.—A. M. C., aged twenty-five years; occupation, engineer; second attack; noticed discharge February 7th; presented himself for treatment on the 14th. Discharge profuse, but other symptoms rather mild. Ordered a mild injection of sulphocarbolate of zinc and hydrastis and methylene-blue capsules, 0·1, four times a day. On the night following, about 1 A. M., I was waked up by my patient, who complained of very severe vesical tenesmus and absolute inability to urinate. He told me he felt bad right after taking the first capsule, but kept on. From 2 P. M. he passed no urine, and the pressure in the bladder was becoming unbearable. I administered a large dose of potassium bromide and applied hot compresses to the perinæum, but these means being ineffective, I was obliged to catheterize. The tenesmus and soreness in the urethral canal persisted for two or three days. Under antiblennorrhagics, with salol and mild antiseptic injections, the cure was complete and rapid.

CASE II.—S. B., twenty-eight years of age; a tall, powerful man; occupation, iceman; moderate drinker; has slight gastric catarrh; several previous attacks; noticed discharge March 25th. Treated himself with strong solution of zinc sulphate and carbolic acid and with patent nostrums. All the symptoms becoming aggravated, he applied for treatment April 7th. I prescribed a sedative alkaline mixture and an injection of aqueous hydrastis with boric acid. He returned on the 14th and I gave him the following prescription:

Methylene blue (Merck)	4·0
Pulv. opii	0·5
Pulv. myristicæ	12·0

M., ft. pulv., div. in caps. gelat. no. xxx.

Sig.: Capiat capsulam unam quater in die.

He took one that afternoon and one in the evening; after the latter he got a severe headache and passed a restless night. Early next morning he took another capsule and went on his route with his ice wagon. The headache became worse—"splitting," as he said—and he complained of dizziness and pain in his stomach. Not thinking of the possibility of there being any connection between his symptoms and the capsules, he took another one at twelve o'clock. His headache and pain after that became excruciating, and he fainted on the wagon. The man who was with him took him home and he was put to bed. For about an hour he remained dazed, mildly delirious, showing signs of suffering intense pain in the stomach and in the bladder. He tried several times to urinate, but failed. At last he passed about two ounces of dark blue, almost black, urine, on seeing which rare phenomenon his relatives became frightened and sent for me. When I came in he had an attack of vomiting which relieved him. His skin was covered with cold perspiration, pulse rapid and feeble, temperature 99° F. Under Dover's powder and phenacetine he perspired freely, and his headache, which was still violent, became relieved. A Sitz bath and two to three doses of potassium citrate with tincture of hyoscyamus enabled him to pass a large quantity of urine (blue-colored) with very little pain. For two days he was unable to get out of bed, so great was his exhaustion. A slight vesical tenesmus lasted for about three days, and a dull gnawing pain at the pit of the stomach for about eight days. His urethritis was cured in about three weeks under appropriate treatment.

This settled the fate of methylene blue in my practice —for internal use, at any rate.

My conclusions are as follows: If we see a case of specific urethritis in a very early stage—the first day—then the use of methylene blue, by its direct action on the gonococci, may do good, though we run the risk of strangury and general toxic manifestations. But as soon as the gonococci have penetrated beneath the epithelial layer of the urethral mucosa then methylene blue can do nothing or harm.

I have used it in three cases of intermittent fever with fair results, but its action is certainly much inferior to that of quinine and arsenic. My general conclusion, therefore, coincides with that of Laveran, that used internally methylene blue is good only for one purpose—to color the urine blue. It is an excellent coloring agent, though, for the plasmodia malariæ and the gonococci Neisseri, and is useful when employed externally in cancerous and tuberculous affections. It is undoubtedly very pleasant to be in a position to report brilliant successes and cures from a new remedy, but it is certainly just as useful to show the reverse side of the medal, and thus save our fellow-practitioners many failures and our patients much unnecessary suffering.

112 East 128th Street.

A REPORT OF ONE HUNDRED CONSECUTIVE CASES OF CATARACT EXTRACTION,

*WITH REMARKS.**

By JOHN. E. WEEKS, M. D.,
SURGEON TO THE NEW YORK EYE AND EAR INFIRMARY;
PROFESSOR OF DISEASES OF THE EYE AND EAR
IN THE WOMAN'S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY, ETC.

In this paper, which the writer has been accorded the privilege of reading to you this evening, an effort has been made to present his views regarding the methods of extraction which seem to him to be most satisfactory, the forms of cataract suitable for extraction, and to report the results in one hundred consecutive cases, including complicated and uncomplicated cataracts that have been extracted by him from February, 1889, to June, 1894.

It has been the practice of the writer to extract the cataractous lens in all cases where the individual has passed the age of twenty-five or thirty years, as soon as the opacity has reached a stage in which it interferes with useful vision, provided the anterior chamber is not inordinately shallow. In certain cases quite a portion of the cortex is left adhering to the capsule, but usually the quantity is small, and readily absorbs when free access to the aqueous humor is accorded. I have yet to regret the extraction of an immature lens. Sclerosed lenses are removed without hesitancy whenever the opacity is sufficient to interfere with useful vision. Posterior cortical cataract and diffuse congenital or slowly developing cataract, and zonular cataract where there is evidence of a dense nucleus or in which there is a deposition of lime in the opaque lamellæ, are removed by extraction. Diabetic cataract and cataract accompanying albuminuria are removed by extraction without fear of complication or delay in the healing process. Black cataract, so far as the writer has been able to ascertain, is always complicated with degenerative vascular changes in the chorioid or retina, and there is always evidence of hæmorrhage or exudation into the vitreous. Vision of more than $\frac{20}{50}$ is seldom realized in these eyes.

The patient, in hospital practice, is put to bed, where he remains during and after the operation. If at the residence of the patient, the operation is performed with the patient in bed, if possible; if not, an operating chair or lounge is brought into service. I prefer to operate with the patient in bed for the purpose of securing as nearly perfect rest as possible afterward.

Ether is seldom employed, having been used but once in the one hundred cases. Instillations of a sterilized four per-cent solution of cocaine are begun ten or fifteen minutes before the operation, three or four instillations being made during the time indicated. If the tension of the globe is a little above the normal, I prefer to begin the cocaine a little earlier for the purpose of producing hypotony to a greater degree. Just before the operation the integument of the lids is carefully cleansed by washing with soap and water, followed by a solution of sublimate (1 to 5,000). The same solution is used for the purpose of thoroughly washing the surface of the conjunctiva and to irrigate the exterior of the eye during the progress of the operation. A drop or two of a ten-per-cent. solution of cocaine is instilled just before the operation is begun. All instruments are sterilized by boiling and are afterward dipped in alcohol. The operation on either eye is done while standing behind the patient. Speculum and fixation forceps are employed; the speculum, after the Graefe model, without a crossbar near the middle but with a stop screw, is preferred. The incision, which is made with a Graefe knife, is carried in the limbus and is made to include two fifths of the circumference of the cornea. This gives an opening with a long axis of at least eleven millimetres and a short axis of at least four millimetres, sufficiently large to permit of the easy escape of the lens. A drop of a ten per-cent. solution of cocaine is instilled immediately after the incision is made. The flexible Graefe cystotome is employed to make the incision in the capsule, the edge of the short fine hook being made as sharp as possible. In all ordinary cases the peripheral capsulotomy is made, the point of the cystotome being inserted beneath the margin of the iris on the nasal side. The fixation forceps are removed immediately after the capsulotomy. In expressing the lens the pressure is applied by means of the ordinary spoon in the direction of the centre of curvation of the globe; it is made steadily and constantly without upward movement, and is continued until the lens has just passed the point of greatest resistance. The pressure is then released almost entirely and the spoon is made to follow the lens from below upward over the cornea, provided there is any soft lens matter, for the purpose of causing as much as possible to escape. Pressure on the scleral lip of the wound is seldom made. After the nucleus of the lens has escaped the speculum is removed. If the patient is unruly, the speculum is removed before the lens is extruded. If much lens substance remains, an attempt is made to remove some of it either by manipulation with the lids or by passing a Crichett's or Wecker's spoon into the anterior chamber. Lavage of the anterior chamber is seldom practised. The writer prefers rather to permit some lens cortex to remain in the eye than to employ lavage, and has not yet had to regret this procedure in cases where no deposit of lime had occurred in the lens tissue.

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* Read before the Section in Ophthalmology and Otology of the New York Academy of Medicine, April 15, 1895.

The spatula, or fine bulbous probe, is employed quite freely for the purpose of replacing the iris. This is usually done after the speculum is removed, but if the patient can not control the lids (is a "winker"), the iris is replaced while the speculum is *in situ*. The introduction of the spatula into the anterior chamber is not followed by bad results if no accident occurs. It not infrequently happens that a mass of soft lens matter is crowded into the upper intact part of the lens capsule. Gentle massage over the upper part of the cornea is made with the lid or spatula, in order to dislodge this mass after the iris is partly restored to the anterior chamber. The writer attaches much importance to the toilet of the wound. Every particle of blood clot, shred of mucus, or tag of capsule is carefully removed. The conjunctival flap, if one exists, is carefully smoothed out, and the lips of the wound made to lie in perfect apposition. Often it is difficult to see that an incision has been made when the lips of the wound are in proper apposition. Sublimate solutions are not employed for the interior of the eye. Normal saline solution, or a two-per-cent. solution of boric acid, sterilized, is used when it is necessary to irrigate the anterior chamber.

The eyes are bandaged with a gauze or flannel roller, as the case may be, in the ordinary manner.

Both eyes are kept bandaged for four or five days. The operated eye is released only on the seventh to the ninth day. Patients who do not object are kept in bed for three or four days, but feeble individuals are often permitted to sit up on the third, and some even on the second day. The writer has not found the adhesive plaster splint to the lids as satisfactory as the bandage.

If no irritation is experienced the eye is not inspected until forty-eight hours have elapsed, although the writer does not hesitate to inspect the eye at any time if pain is experienced.

The operation for the extraction of cataract may be done in the open general hospital ward, and the patient kept in such a ward afterward without subduing the light, with probably as good chances of a successful issue as in a special ward with the light very much reduced. Light does not deter the healing nor does it inconvenience the patient. The writer prefers to have his cataract patient in a moderately well-lighted room, as the process of becoming accustomed to light when the bandage is removed is then of no moment.

In regard to the use of eserine, cocaine, or atropine in the eye immediately after the operation, the writer permits the conditions of the iris to decide for him. If the iris is apparently of normal tone, reacts well to light, and does not appear to be greatly congested, nothing is employed after the operation. If much congested, a drop of atropine is used. If the sphincter appears to have been paralyzed by the pressure of the lens in its escape, and there is some tendency to irregularity of the pupil after the iris has been replaced, eserine, one per cent., is employed. In the one hundred cases reported eserine was employed thirteen times. A mild iritis occurred in one case, possibly but not positively due to the eserine.

When should iridectomy be performed in preference to the simple operation? In all cases, except in cataract with glaucomatous tension where the pupillary margin is free; and in some cases, even where a few posterior synechiæ exist, the writer prefers to attempt extraction without iridectomy. The lens may be dislocated or *in situ*. The cataract due to traumatism or to other causes. In cataract with glaucoma, and where complicated with extensive post-synechiæ, iridectomy becomes necessary. The writer considers simple extraction easier of performance than the combined, also that it gives the patient a better chance of good vision, with much less opportunity to accident. The loss of vitreous and the incarceration of vitreous, capsule, and iris are much less frequent in simple extraction, and the hæmorrhage, which in some cases where iridectomy is performed is very annoying and often prevents the close coaptation of the lips of the wound, is avoided. If iridectomy should be done, the indications for its performance will arise as the operation progresses. These indications can only be stated in a general way. They must be recognized as they arise. Some of the grosser indications are: Severe wounding of the iris when making the incision; great difficulty in extruding the lens from rigid sphincter or from adhesion to the capsule, necessitating the use of a spoon; disinclination of the lens to present in cases of dislocated lens; atonic, congested condition of the iris, with a tendency to prolapse on attempt to restore it to the anterior chamber; individual peculiarity to blepharospasm, with excessive pressure from the lower lid, etc.

Form of Capsulotomy.—What sort of a capsulotomy shall be done? The writer is of the opinion that that form of capsulotomy that leaves as few shreds of capsule as possible is to be preferred. A band of thickened tissue forms where the edges of torn capsule fall together and unite. The iris, which is bruised more or less in its upper part by the passage of the lens, readily unites with the raw surfaces of capsular flaps, and the shreds of capsule not infrequently find their way into the wound. For these reasons, a free laceration of the capsule is avoided by the writer. A quadrilateral capsulotomy is desirable if the quadrangular flap can be easily obtained. The writer prefers the curved peripheral flap, as advocated by Knapp, as, in his experience, it gives a smoother healing, with less likelihood of the formation of strong cicatricial bands over the pupillary area. It is possible that discission is more frequently required after this form of capsulotomy, as both anterior and posterior portions of the capsule remain intact in the eye; however, since only a division of the capsule can assure permanent maximum vision, the writer does not consider this a drawback.

In cases of thickened capsule, with deposits on the posterior surface of the anterior portion, the writer seizes the capsule with the capsule forceps and removes it, frequently before extruding the lens.

Prolapse of Iris.—In the writer's opinion, prolapse should be dealt with by excision as soon as discovered, if the prolapsing iris can not be restored and the pupil be made central again. The latter may sometimes be done. In one recent case, in which the prolapse was produced by injury to the eye six days after the extraction, the writer was enabled to restore the iris to the anterior chamber and to obtain healing with central pupil. The restoration was performed two hours after the injury; some difficulty was experienced on account of plastic adhesions which had already formed. After the excision of a prolapse, the columns of the coloboma should be rendered free, the wound being cleared as carefully and completely as in simple iridectomy; thorough antisepsis should be observed. The writer has seen nothing but the most gratifying results follow excision of prolapsed iris, and fails to recognize any grounds on which those who advocate letting the prolapse alone can base their argument. A neglected prolapse can not fail to be a source of annoyance to the patient, and is often a source of infection and the cause of the loss of the eye.

Double Extraction.—In the cases reported double extraction was done in three instances with perfect success; however, the writer does not advise double extraction in cases where the patient can return for the treatment of the second eye. The necessary movements of the eye first operated on when the second is being operated on are a source of danger.

Discission.—The fact that the writer has resorted to discission in eighty-eight per cent. of his private cases and in sixty per cent. of his hospital cases (the percentage of the latter would be larger if opportunity had presented) is sufficient to indicate his position on the question of discission. The experience of the writer does not include less than a hundred discissions. In three or four cases slight reaction has followed this operation. No eyes have been lost, and in only three has there been a diminution in the vision below that which existed before the discission was done. The operation, as performed by the writer, is similar to that performed by Dr. Knapp, to whom the writer is largely indebted for his knowledge of the procedure. Asepsis is obtained as nearly as possible by the method employed when operating for the extraction of cataract. Atropine and cocaine are employed to dilate the pupil *ad maximum* and to produce anæsthesia. The patient is operated on when in bed or in the operating chair, and artificial illumination is always employed. The discission is done by means of the knife needle, size depending largely on the depth of the anterior chamber. Speculum and fixation forceps are employed. The knife enters the anterior chamber at a point on the horizontal meridian, midway between the centre and the periphery of the cornea, in an oblique direction, and the capsule is pierced at a point close to the opposite margin of the iris. A horizontal incision through the capsule is first made, and the vertical incision follows—an attempt to form a perfect crucial incision. In cases where thickened bands exist in the capsule the bands should be avoided by the knife. Cutting, not tearing, of the capsule, with as little dragging on the ciliary processes as possible, is to be aimed at. If the crucial incision can be made, a perfect central opening will result. The tearing obtained in the ordinary double-needle operation is often unsatisfactory in its results, and the operation required for the use of Wecker's scissors or for Panas's procedure to remove the capsule *in toto* is too extensive to meet with much favor when the result desired is to remove a wrinkled but very slightly opaque capsule. The knife needle must be properly made, and must be very sharp to do satisfactory work. It is not applicable to all cases. A repetition of the operation is sometimes necessary. The dangers of the secondary operation are not to be overlooked. Infection by the knife may occur, but is avoidable. Infection of the wound may be prevented by sealing it up with the cautery point, and this is probably advisable in almost every case. The writer resorts to it frequently. In some cases the knife when it is withdrawn is followed by a shred of capsule or of vitreous, which may engage in and even be drawn through the wound. This may escape the notice of the operator at the time, and will be the means of carrying infectious germs into the eye. In two or three days a grayish shred is seen hanging from the wound, and a grayish line may be traced into the anterior chamber. The eye will be irritable and slightly painful. Bathed in the secretion of the conjunctival sac, the shred accumulates bacteria and adds to the infection of the eye. The whole process may be stopped effectually by cauterizing the wound and destroying the shred. It is not sufficient to snip off the shred. The writer is convinced that too much dragging on the capsule, and in some cases deep division of the vitreous, or both combined, serve to set up a mild cyclitis, in some cases with the production of numerous floating opacities in the vitreous, some of which may remain permanently. While in favor of the secondary operation, the writer is aware that it should be performed carefully by skilled operators, and with as little disturbance to the eye as possible. The irritation produced by trauma alone is often sufficient to prevent good visual results. The writer employs a mask—usually that devised by Dr. Ring, of this city—in all his cases at the present time, up to the eighth or tenth day.

No.	Sex.	Age.	Health.	Cataract	Functional examination	Date.	Operation.	History of healing.	Time in days.	Immediate vision.	Secondary operation.	Ultimate vision.	Remarks.
1	M.	65	Good.	Mature senile.	Good.	Feb. 11, 1889.	Simple; chair.	Restoration of anterior chamber only after eight days; no inflammation.	17	$\frac{20}{50}$	Discission, Mar. 20, 1889, central pupil.	$\frac{20}{20}$	A cystoid scar formed at the outer angle of the wound.
2	F.	57	"	Morgagnian, 16 years.	"	April 18, 1889.	Simple; capsule opened with knife when making section; anterior portion of capsule removed.	Uneventful; pupil central.	16	$\frac{20}{20}$	June 1st, discission, followed by mild cyclitis.	$\frac{20}{100}$	Operation in chair.
3	F.	40	Rheumatism.	Mature senile.	"	Oct. 16, 1889.	Iridectomy; no accident.	Do.	14	$\frac{20}{100}$	Nov. 9, 1889.	$\frac{20}{20}$+	Some soft cortex left after first operation absorbed.
4	M.	28	Good.	Soft O. S.	"	Jan. 15, 1891.	Simple; smooth. Patient squeezed out a few drops of vitreous after the speculum was removed.	Healing with iris lying against wound; no prolapse; no iritis.	16	$\frac{20}{40}$	....	.....	Pupil slightly eccentric. Operation in open ward.
5	M.	28	"	Soft O. D.	"	Mar. 20, 1891.	Simple.	Uneventful; pupil central.	..	$\frac{20}{40}$	....	.....	Open ward.
6	F.	75	"	Mature senile.	"	Mar. 11, 1891.	"	Uneventful.	12	$\frac{20}{40}$+	....	.....	Operation in open ward.
7	F.	74	"	Hypermature.	"	Do.	Iridectomy: lens expelled with difficulty because of adhesion to posterior capsule.	"	12	$\frac{20}{50}$	....	.....	Open ward.
8	F.	68	"	Immature.	"	Do.	Simple, lens expelled by forcible contraction of lids; pupil central.	Iris adherent to wound; no prolapse; no iritis.	12	$\frac{20}{30}$	....	.....	" "
9	F.	80	"	Hypermature.	"	Do.	Simple.	Uneventful.	..	$\frac{20}{30}$	....	.....	" "
10	F.	61	"	Mature.	"	Mar. 13, 1891.	Iridectomy; patient lost about three drops of vitreous.	"	14	$\frac{20}{40}$	....	.....	Patient very unruly. Open ward.
11	F.	77	Feeble.	Mature senile.	"	May 28, 1891.	Iridectomy; irrigated anterior chamber with $HgCl_2$, 1 to 10,000.	"	14	$\frac{20}{100}$	June 24th, no reaction.	$\frac{20}{20}$	Hæmorrhage at macula O. S.; O. D. normal; hyaline casts in urine.
12	F.	50	Rheumatism.	Do.	"	April 10, 1891.	Simple; eserine after the operation.	"	13	$\frac{20}{70}$	....	$\frac{20}{70}$	Patient highly myopic; rarefaction of chorioid.
13	F.	30 (?)	Good.	Traumatic, 13 years.	Faulty.	April 30, 1891.	Free iridectomy; as the speculum was being removed the patient squeezed and expelled soft lens *in toto*; thick capsule removed afterward.	"	13	$\frac{6}{200}$	....	.....	Operation for cosmetic effect; probable partial detachment of the retina; total posterior synechia.
14	M.	24	"	Traumatic, 15 years.	"	May 5, 1891.	Simple; small amount of lens substance expelled; considerable cortex remained.	On May 16th a mild iritis developed.	20	$\frac{1}{\infty}$	....	.....	For cosmetic effect; no vision expected; detachment of retina.
15	M.	73	Rheumatism.	Mature senile.	Good.	May 9, 1891.	Iridectomy; wound enlarged with scissors.	Uneventful.	12	$\frac{20}{20}$ —	....	$\frac{20}{20}$	
16	M.	63	Emphysema.	Do.	"	May 30, 1891.	Simple; some cortex remains.	"	19	$\frac{20}{200}$	July 14, 1891.	$\frac{20}{20}$	
17	F.	83	Good.	Do.	"	June 6, 1891.	Iridectomy; removed cortex by manipulations with lids.	"	20	$\frac{20}{50}$	....	.....	Italian; returned to Italy; double extraction.
18	F.	83	"	Do.	"	Do.	Iridectomy.	"	20	$\frac{20}{30}$	....	.....	
19	F.	68	"	Do.	"	June 2, 1891.	"	"	15	$\frac{20}{100}$	....	.....	Could be improved by discission.
20	F.	55	"	Do.	"	July 9, 1891.	Simple; attempted iridectomy; lens large; escaped with difficulty.	"	17	$\frac{20}{30}$	Aug. 11, 1891.	$\frac{20}{20}$	
21	M.	52	"	Immature.	"	July 14, 1891.	Simple; eserine.	"	16	$\frac{20}{50}$	Do.	$\frac{20}{30}$	
22	M.	70	"	Mature senile.	"	Do.	" "	Incarceration of iris on the third day.	17	$\frac{20}{100}$	....	.....	Could be much improved by discission.
23	F.	69	Rheumatism.	Do.	"	July 28, 1891.	Simple.	Uneventful.	12	$\frac{20}{40}$	Aug. 18, 1891.	$\frac{20}{20}$	

No.	Sex.	Age.	Health.	Cataract.	Functional examination.	Date.	Operation.	History of healing.	Time in days.	Immediate vision.	Secondary operation.	Ultimate vision.	Remarks.
24	M.	53	Good.	Hyper-mature.	Good.	Aug. 8, 1891.	Simple; eserine.	Aug. 13th: slight incarceration of iris. Aug. 15th: incarceration of iris has disappeared.	15	$\frac{20}{50}$	Aug. 31, 1891.	$\frac{20}{20}$	
25	F.	66	Asthma.	Mature senile.	"	Aug. 15, 1891.	Iridectomy.	Aug. 19th: wound opened, blood in anterior chamber.	21	$\frac{8}{100}$	....	......	Results of kerato-uveitis.
26	M.	65	Good.	Sclerosed lens.	"	Oct. 15, 1891.	Simple; lens dislocated while performing capsulotomy.	Uneventful; pupil central.	14	$\frac{20}{70}$	April 13, 1892.	$\frac{20}{20}$	
27	F.	40	Rheumatism.	Senile.	"	June 10, 1891.	Iridectomy.	Uneventful.	14	$\frac{20}{100}$	Nov. 9th.	$\frac{20}{20}$+	
28	F.	60	Good.	Mature senile.	"	April 19, 1892.	Simple; eserine.	"	11	$\frac{20}{100}$	....	......	Could be improved by discission.
29	F.	51	"	Do.	"	Do.	" "	"	14	$\frac{20}{200}$	May 19th.	$\frac{20}{200}$	Very highly myopic, sclero-chorioiditis.
30	F.	54	"	Mature senile, complicated.	Faulty.	May 10, 1892.	Simple.	"	13	0	....	......	Projection confined to small part of field; detach. of the retina
31	M.	73	Feeble.	Mature senile.	Good.	May 12, 1892.	Simple; incision enlarged with scissors.	Patient pulled the bandage off three times on the afternoon after the operation; panophthalmitis.	21	0	....	......	Eye lost.
32	M.	66	Good.	Black cataract, dislocated.	Faulty.	June 16, 1892.	Iridectomy; lens expelled with some loss of vitreous after speculum was removed.	June 30th: mild iritis.	33	$\frac{2}{200}$	Aug. 16, 1892.	$\frac{20}{50}$	Disseminate chorioiditis.
33	M.	59	"	Traumatic.	Good.	July 25, 1892.	Simple; some cortex left in capsule.	Uneventful.	12	$\frac{12}{200}$	....	......	Will be much improved by discission.
34	M.	30	"	Traumatic, shrunken.	"	June 30, 1892.	Do.	"	12	$\frac{1}{8}$	Aug. 23, 1892.	$\frac{20}{40}$	The foreign body can be seen lodged in upper part of the remaining capsule.
35	F.	50	"	Hyper-mature senile.	"	Aug. 31, 1892.	Iridectomy; iris wounded in making the incision.	Sept. 6th: patient hit the eye and reopened the wound.	14	$\frac{10}{200}$	....	......	Would be much improved by a discission.
36	M.	85	Feeble.	Hypermature morgagnian.	"	May 16, 1892.	Simple; section finished in clear cornea.	Uneventful.	12	$\frac{20}{50}$	May 31st.	$\frac{20}{20}$	Operation in chair.
37	F.	71	"	Mature senile.	"	April 28, 1892.	Simple; escape of one bead of vitreous.	"	13	$\frac{20}{70}$	....	......	Iris adherent to wound; discission required.
38	F.	71	"	Do.	"	Do.	Simple; no accident.	"	13	$\frac{20}{50}$+			
39	M.	73	"	Do.	"	May 23, 1892.	Simple; iris replaced with difficulty. Patient vomited immediately after the operation.	May 24th: iris prolapsed. May 25th: excised prolapse. Sept. 30: membrane in pupil.	73	$\frac{4}{200}$	Oct. 6th: discission by means of two knife needles.	$\frac{20}{40}$	Patient uncontrollable.
40	M.	17	Fair.	Diffuse cataract, crater pupil.	"	Oct. 22, 1892.	Ether; chair; large iridectomy; pupillary membrane removed with anterior capsule; small, entire mumified lens removed; lost a few drops of vitreous.	Healing uneventful.	14	$\frac{20}{200}$	Nov. 26, 1892: discission with knife needle; wound cauterized.	$\frac{20}{70}$	Interstitial keratitis and anterior uveïtis; corneæ large with numerous maculæ.
41	M.	17	"	Do.	"	Jan. 7, 1893.	Cocaine, ten per cent.; chair. (As in No. 40.)	" "	15	$\frac{15}{200}$	Feb. 11, 1893: anterior chamber emptied by leakage along the shaft of the knife. Operation not completed until Mar. 10, 1893.	$\frac{20}{70}$	Both corneæ large and extremely thin.
42	M.	64	Rheumatism and alcoholism.	Mature senile.	"	Do.	Cocaine, ten per cent.; chair; iridectomy.	Healing satisfactory up to tenth day, when a low form of iritis (rheumatic) developed; this readily disappeared under the salicylates.	14	$\frac{20}{50}$	Feb. 11th: some cephalalgia; Feb. 12th: healing uneventful.	$\frac{20}{20}$	Patient a confirmed alcoholic.

No	Sex.	Age.	Health.	Cataract.	Functional examination.	Date.	Operation.	History of healing.	Time in days.	Immediate vision.	Secondary operation.	Ultimate vision.	Remarks.
43	F.	57	Good.	Yellowish white, 25 years; shrunken.	Good.	Jan. 24, 1893.	Cocaine, ten per cent.; simple. Lens did not escape readily; removed by passing a wire loop behind and pressing against the cornea. Eserine, one per cent.	Healing uneventful.	12	$\frac{20}{30}$	Feb. 14th.	$\frac{20}{20}$ +	Iris discolored; slightly atrophic.
44	M.	75	"	Immature senile. V. = $\frac{9}{200}$.	"	Mar. 29, 1893.	Cocaine, ten per cent.; chair; iridectomy.	" "	12	$\frac{20}{70}$ +	None.	$\frac{20}{70}$ +	Adherent leucoma in lower part of cornea, after perforating ulcer, twenty years ago.
45	F.	71	"	Posterior cortical cataract. V. = $\frac{20}{20}$.	"	May 17, 1893.	Cocaine, ten per cent.; chair; simple.	" "	12	$\frac{20}{30}$	June 8, 1893.	$\frac{20}{20}$	
46	M.	70	Rheumatic.	Sclerosed lens. V. = $\frac{20}{200}$.	"	May 24, 1893.	Do.	May 26th: no reaction; anterior chamber restored. May 27th: anterior chamber empty: iris against wound; eserine.	12	$\frac{20}{200}$	June 14th: pupil perfectly central; no synechiæ.	$\frac{20}{20}$	
47	M.	54	Good.	Mature senile.	"	Oct. 19, 1893.	Cocaine, ten per cent.; chair; simple; eserine.	Healing uneventful until sixth day; patient struck the eye, producing a prolapse; excised.	18	$\frac{20}{70}$	Nov. 11, 1893.	$\frac{20}{30}$	With eye bandaged and hands tied, patient rubbed the eye.
48	M.	61	Gouty.	Do.	"	Mar. 7, 1893.	Cocaine, ten per cent.; simple.	Except slight œdema of lids and a very little stripped keratitis, uneventful healing.	15	$\frac{20}{30}$	July, 1893.	$\frac{20}{20}$	
49	M.	70	Good.	Do.	"	May 2, 1893.	Cocaine, ten per cent.; simple; no accident.	Healing uneventful.	13	$\frac{20}{30}$	May 30, 1893: Cauterized; reaction marked; shred of mucus hanging from wound; 4th day, again cauterized.	$\frac{20}{20}$ —	In hospital eight days after second operation.
50	M.	50	"	Do.	"	Do.	Cocaine, ten per cent.; simple.	May 6th: iris congested; healing uneventful; cortex fills pupil.	13	$\frac{4}{200}$	October, 1893.	$\frac{20}{30}$	
51	M.	60	"	Traumatic subluxated.	"	May 23, 1893.	Cocaine, ten per cent.; simple; four or five drops of vitreous lost; pupil nearly central.	Healing uneventful.	12	$\frac{20}{40}$	....	......	Iris was folded backward above, making pupil oblong.
52	F.	45	"	Sclerosed. V. = $\frac{20}{200}$.	"	May 25, 1893.	Cocaine, ten per cent.; simple.	" "	14	$\frac{20}{40}$	June 22d: wound cauterized.	$\frac{20}{20}$	Double extraction.
53	F.	45	"	Sclerosed.	"	Do.	Do.	" "	14	$\frac{20}{40}$ +	June 22d.	$\frac{20}{20}$	" "
54	M.	29	"	Traumatic cataract.	Faulty.	June 1, 1893.	Cocaine, four per cent.; simple; eserine, one per cent.	" "	12	x^1	....	......	Total detachment of retina. Operation for cosmetic purposes.
55	M.	49	"	Traumatic, nine weeks' duration.	Good.	June 6, 1893.	Cocaine, ten per cent.; simple; foreign body found in lens.	Prolapse. June 8th: excised.	9	$\frac{20}{40}$	None.	$\frac{20}{15}$	Piece of steel could be seen imbedded in the lens before the operation.
56	M.	53	"	Mature senile.	"	June 8, 1893.	Cocaine, four per cent.; simple; eserine.	Healing uneventful; nose sprayed with solution of $HgCl_2$, 1 to 5,000, three times daily; iodol insufflations.	9	$\frac{20}{40}$	....	......	Had atrophic rhinitis and dacryocystitis; would be improved by discission.
57	F.	65	Feeble.	Do.	"	Do.	Cocaine, four per cent.; simple.	Uneventful.	12	$\frac{20}{30}$	July 20th: cauterized wound.	$\frac{20}{30}$	
58	M.	35	Fair.	Traumatic, immature.	"	June 15, 1893.	Do.	Healing uneventful.	11	$\frac{20}{70}$	....	$\frac{20}{30}$	Should have a capsulotomy performed.
59	M.	43	Anæmic.	Mature senile.	"	Do.	Do.	" "	12	$\frac{20}{40}$	....	......	Would be improved by discission.
60	M.	19	Good.	Zonular.	"	Do.	Cocaine, ten per cent.; simple.	" "	14	$\frac{20}{40}$	July 25, 1893.	$\frac{20}{20}$ +	

No.	Sex.	Age.	Health	Cataract.	Functional examination.	Date.	Operation.	History of healing.	Time in days.	Immediate vision.	Secondary operation.	Ultimate vision.	Remarks.
61	M.	19	Good.	Zonular.	Good.	June 22, 1893.	Cocaine, four per cent.; simple.	Healing uneventful.	16	$\frac{20}{40}$	July 25, 1893: The division of the capsule was accomplished by the use of two needles.	$\frac{20}{20}$ +	
62	M.	53	"	Sclerosed lens.	"	July 28, 1893.	Do.	" "	11	$\frac{20}{30}$	Aug. 17, 1893: wound cauterized.	$\frac{20}{20}$	Double extraction.
63	M.	53	"	"	"	Do.	Do.	" "	11	$\frac{20}{30}$	Do.	$\frac{20}{20}$	" "
64	M.	49	"	Zonular.	"	Aug. 1, 1893.	Do.	" "	12	$\frac{20}{100}$	October, 1893.	$\frac{20}{30}$	
65	F.	60	"	Mature.	"	Aug. 29, 1893.	Cocaine, four per cent.; iridectomy.	" "	12	$\frac{10}{200}$	Oct. 3d.	$\frac{14}{200}$	Total posterior synechiæ from old iritis.
66	M.	34	"	Traumatic.	"	Aug. 23, 1893.	Do.	Some blood clot in anterior chamber absorbed and healed without accident.	10	$\frac{18}{200}$	....		Perforating wound of cornea on April 3, 1893. V. = $\frac{1}{\infty}$. Adherent leucoma.
67	M.	57	"	Diabetes; diabetic cataract.	"	Do.	Cocaine, four per cent.; simple.	Healing uneventful.	10	$\frac{20}{50}$	September, 1893.	$\frac{20}{20}$	Patient has had diabetes for some years.
68	M.	35	"	Traumatic.	"	Do.	Cocaine, four per cent.; simple; eserine.	" "	10	$\frac{12}{200}$	Mar. 13, 1894.	$\frac{20}{30}$	Foreign body entered eye Dec. 1, 1892. Small scar near centre of cornea; hole through iris; eye quiet; ozæna.
69	M.	69	"	Mature senile.	"	Dec. 16, 1893.	Cocaine, ten per cent.; simple.	" "	9	$\frac{20}{70}$	Jan. 8, 1894: cauterized wound.	$\frac{20}{20}$ +	Some cortex left in eye; absorbed.
70	F.	75	"	Do.	"	Aug. 30, 1893.	Cocaine, four per cent.; simple; eserine, one per cent.	Healing uneventful up to Sept. 12th, when mild iritis developed.	16	$\frac{20}{100}$	Oct. 20, 1893.	$\frac{20}{40}$	Anterior synechia was present on Sept. 16th; disappeared subsequently. Open ward.
71	F.	70	"	Hyper-mature senile.	"	Do.	Cocaine, four per cent.; simple.	Uneventful.	11	$\frac{20}{50}$	Oct. 6, 1893.	$\frac{20}{30}$	Open ward.
72	F.	82	"	Mature senile.	"	Sept. 23, 1893.	Cocaine, four per cent.; simple; eserine, one per cent.	Healing complicated by attack of acute conjunctivitis.	30	$\frac{20}{70}$	Oct. 20, 1893.	$\frac{20}{30}$	" "
73	F.	65	"	Do.	"	Do.	Do.	Healing uneventful until thirteenth day, when wound was reopened; good recovery.	12	$\frac{20}{40}$	Nov. 20, 1893.	$\frac{20}{40}$	" "
74	M.	64	"	Do.	Faulty.	Do.	Do.	Healing uneventful.	27	......	Oct. 20, 1893: Evidence of previous retinitis.	$\frac{20}{70}$	O. S. Evidence of old neuro-retinitis; remains of hæmorrhage near disc. Open ward.
75	M.	60	"	Do.	Good.	Do.	Do.	" "	13	$\frac{20}{40}$	Oct. 20, 1893.	$\frac{20}{30}$	Open ward.
76	F.	75	"	Do.	"	Oct. 20, 1893.	Do.	" "	13	$\frac{20}{40}$	....	$\frac{20}{40}$	" "
77	F.	60	"	Do.	"	Feb. 2, 1894.	Cocaine, four per cent.; simple; lens removed in capsule; no loss of vitreous.	" "	12	$\frac{20}{50}$	....	Feb. 28th, $\frac{20}{20}$.	" "
78	M.	58	"	Do.	"	Do.	Cocaine, four per cent.; simple.	" "	12	$\frac{20}{70}$	....	Mar. 16th, $\frac{20}{30}$.	" "
79	M.	50	"	Immature senile.	"	April 25, 1894.	Cocaine, ten per cent.; simple; chair.	" "	9	$\frac{20}{50}$	May 19th.	July 7th, $\frac{20}{20}$.	
80	F.	39	Feeble.	Hypermature, shrunken, 11 years.	Good in all parts of the field except at the periphery above.	Feb. 29, 1894.	Cocaine, ten per cent.; simple; chair. Much of the anterior capsule came away with the lens.	" "	12	$\frac{8}{200}$	Pupil perfectly clear.	$\frac{4}{200}$	Detachment of retina, O. D. Detachment visible in O. S. after cataract was removed.

No.	Sex.	Age.	Health.	Cataract.	Functional examin. tion.	Date.	Operation.	History of healing.	Time in days.	Immediate vision.	Secondary operation.	Ultimate vision.	Remarks
81	F.	50	Good.	Sclerosed lens.	Good.	Mar. 17, 1894.	Cocaine, ten per cent.; simple; chair; some cortex remained.	Healing uneventful.	10	$\frac{20}{200}$	April 30th: A very mild iritis followed, lasting three days.	$\frac{20}{40}$ —	Patient has never seen well with the left eye on account of a high degree of astigmatism; amblyopia.
82	F.	80	Fair.	Mature senile.	"	Aug. 15, 1894.	Cocaine, ten per cent.; simple.	" "	11	$\frac{20}{40}$	Aug. 15, 1894: Opening in capsule closed; second needling, Oct. 10, 1894.	$\frac{20}{50}$	No reaction.
83	M.	69	Good.	Do.	"	Oct. 17, 1894.	Do.	" "	12	$\frac{20}{30}$	Nov. 20th.	$\frac{20}{20}$ —	
84	M.	69	"	Immature senile.	"	Oct. 30, 1894.	Do.	" "	12	$\frac{20}{40}$ —	" "	$\frac{20}{20}$ +	
85	M.	65	Rheumatic.	Sclerosed lens.	"	Mar. 6, 1894.	Do.	" "	14	$\frac{20}{70}$ —	May 8, 1894.	$\frac{20}{30}$	
86	M.	57	Good.	Immature senile.	"	Mar. 13, 1894.	Do.	" "	14	$\frac{20}{20}$ —	April 23d.	$\frac{20}{20}$ +	
87	M.	73	"	Mature senile.	"	Do.	Do.	" "	15	$\frac{20}{40}$	....	$\frac{20}{20}$	
88	M.	54	"	Immature senile.	"	Do.	Do.	" "	14	$\frac{20}{20}$ —	April 23, 1894.	$\frac{20}{20}$ +	
89	F.	52	Feeble.	Mature senile.	"	Mar. 27, 1894.	Cocaine, ten per cent.; simple. Pupil not quite central, folded backward above.	Mar. 29th: iris lies against the wound above. April 3d: wound opened by blow; no prolapse.	17	$\frac{20}{50}$	....	......	Patient winked constantly; unmanageable.
90	F.	51	"	Mature senile, complicated.	Goodin lower part of field only.	Do.	Cocaine, ten per cent.; simple. Patient squeezed out two drops of vitreous just as the incision was finished. Lens extruded without further loss of vitreous, but when the margins of the wound were being adjusted, patient again squeezed out a few drops of vitreous; iris folded backward; no prolapse.	April 3d: small prolapse.	17	$\frac{3}{200}$	....	$\frac{6}{200}$	Prolapse allowed to remain; patient too feeble to permit of further operative procedure; atrophic chorioiditis.
91	M.	65	Rheumatic.	Sclerosed lens. V. = $\frac{20}{200}$.	Good.	April 3, 1894.	Cocaine, ten per cent.; simple.	Healing uneventful.	12	$\frac{20}{100}$	May 8th.	$\frac{20}{20}$	
92	M.	66	Good.	Mature senile.	"	April 10, 1894.	Do.	April 11th: prolapse of iris; iridectomy.	15	$\frac{20}{50}$	....	April 1, 1895, $\frac{20}{20}$.	
93	F.	52	Feeble.	Do.	"	Do	Ether; simple.	Healing uneventful.	21	$\frac{20}{40}$	....	....	Patient unruly; under cocaine in previous operation.
94	M.	55	Good.	Do.	"	April 17, 1894.	Cocaine, ten per cent.; simple.	" "	12	$\frac{20}{40}$			
95	M.	50	Alcoholic.	Do.	"	April 24, 1894.	Do.	April 28th: developed delirium tremens, which continued four days.	12	$\frac{20}{50}$	Mar. 19, 1895.	$\frac{20}{20}$ —	Bromide of sodium, morphine sulphate, and chloral hydrate employed to control the delirium.
96	M.	31	Syphilitic.	Partly opaque; soft.	"	May 1, 1894.	Cocaine, ten per cent.; simple. Capsulotomy immediately beneath the synechia; expressed only one half of lens substance, the rest remained.	Uneventful.	12	......	July 30, 1894	$\frac{20}{15}$	Cataract due to gummatous iritis; broad synechia upward.
97	M.	64	Good.	Immature senile; anterior chamber shallow.	"	May 15, 1894.	Cocaine, ten per cent.; simple. Very small incision made with cataract knife on account of shallow anterior chamber; enlarged with scissors.	"	10	$\frac{20}{50}$	....	April 6, 1895, $\frac{20}{20}$	

No.	Sex.	Age.	Health.	Cataract.	Functional examination.	Date.	Operation.	History of healing.	Time in days.	Immediate vision.	Secondary operation.	Ultimate vision.	Remarks.
98	F.	48	Good.	Mature senile.	Good.	Do.	Cocaine, ten per cent.; simple.	Uneventful.	11	$\frac{20}{70}$	......	......	Would be improved by discission.
99	M.	57	Diabetic.	Immature senile.	"	Do.	Do.	"	11	$\frac{20}{50}$	June 26, 1894.	$\frac{20}{20}$ +	
100	M.	50	Good.	Black cataract.	Faulty.	June 5, 1894.	Cocaine, ten per cent.; iridectomy. After making the incision an attempt was made to express the lens without success; iridectomy. The lens could not now be expressed, but was removed with the wire loop.	"	11	$\frac{20}{70}$	......	......	Some small opacities in the vitreous; lens adherent to capsule.

Of the one hundred extractions, twenty were extractions of complicated cataract. The cataracts accompanying sclero-chorioiditis posterior were not included in the list of complicated cataracts.

The complicated cases included:

Adherent leucoma, two—one after perforating corneal ulcer, one after a penetrating wound; atrophic chorioiditis, one; disseminate chorioiditis, one—black cataract; exudative chorioiditis, one—black cataract dislocated; detachment of the retina, five—four determined before operation, and one suspected but not determined until after operation; foreign body in the eye, three; results of kerato-uveitis, three; results of gummatous iritis, one; results of neuro-retinitis, one; partly dislocated lens, one; total posterior-synechia, one.

No case has been classified as complicated in which there were not gross lesions in parts of the eye aside from the lens.

In three of the cases of detached retina the lens was removed for the cosmetic effect at the request of the patient. In two cases the lens was removed in the hope of obtaining better vision than the patient had before the operation, the vision of the fellow eye being $\frac{6}{200}$ in one and $\frac{15}{200}$ in the other case. The operations were thought advisable from the evidence obtained by the projection test, which indicated defects in small portions of the retinæ only. The visual result was nil in one case, and $\frac{4}{200}$ still present at the end of a year in the other.

In the writer's experience faulty projection is a very sure symptom of extensive intra-ocular changes.

The visual results in the remaining fifteen cases of complicated cataract were:

Adherent leucoma—wound, $\frac{18}{200}$, ulcer, $\frac{20}{70}$; chorioiditis, $\frac{20}{70}$, $\frac{6}{200}$, $\frac{20}{50}$; foreign body, $\frac{20}{40}$, $\frac{20}{15}$, and $\frac{20}{30}$; after kerato-uveitis, $\frac{8}{100}$, $\frac{20}{70}$, and $\frac{20}{70}$; after gummatous iritis, $\frac{20}{15}$; after neuro-retinitis, $\frac{20}{70}$; subluxated lens, $\frac{20}{40}$; total posterior synechia, $\frac{14}{200}$, $\frac{18}{200}$.

In two of the cases of chorioiditis the cataract was of the black variety (of a very deep mahogany color); they adhered closely to the capsule and were removed with difficulty. One was dislocated.

In one of the cases of the removal of cataract, where a foreign body had entered the eye, the foreign body was found lodged in the lens substance. In the other two cases the foreign body remained in the eye, but gave rise to no disturbance.

In the eighty cases classed under the head of uncomplicated, fifty-four of the patients were in good health, twelve were in feeble or fair health, seven were affected with arthritic rheumatism, one with gout. One patient was rheumatic and alcoholic; one suffered from emphysema, two with diabetes, and two had suffered from alcoholism. Reaction amounting to an iritis, all of mild type, occurred in one rheumatic individual, in one gouty individual, and in one individual who was apparently in good health. There was a decided tendency to inflammatory reaction and to long-continued injection of the ocular conjunctiva, observed in the cases which occurred in patients with a strongly marked rheumatic diathesis. In the diabetic and alcoholic patients the healing progressed as smoothly as it did in those who were in good health.

Visual results in the uncomplicated cases:

V. = $\frac{20}{20}$ or better in thirty-six (forty-five per cent.) cases. V. = $\frac{20}{30}$ in thirteen (16·25 per cent.) cases; (ten gave vision of $\frac{20}{20}$ +); V. = $\frac{20}{40}$ in thirteen (16·25 per cent.) cases; V. = $\frac{20}{50}$ in six (7·5 per cent.) cases; V. = $\frac{20}{70}$ in three (3·75 per cent) cases; V. = $\frac{20}{100}$ in five (6·25 per cent.) cases; V. = $\frac{20}{200}$ in one (1.25 per cent.) case; $\frac{12}{200}$ in one case; $\frac{10}{200}$ in one case, and nil in one case.

The visual results were not as good as might have been obtained in many of the cases where the vision = $\frac{20}{30}$ or less, had the patients presented themselves for division of the capsule.

Secondary operation, discission of the capsule, was performed in forty-eight, or sixty per cent., of the uncomplicated cases. Of the writer's cases in private practice discission was performed in eighty-eight per cent.

It appears that in no case where discission was not performed was the vision better than $\frac{20}{20}$. In the cases where vision of $\frac{20}{20}$ was obtained, discission was performed in twenty-one of the twenty-seven. Discission was done in nine cases out of thirteen with vision of $\frac{20}{30}$; four of thirteen with vision of $\frac{20}{40}$; one of six with vision of $\frac{20}{50}$; one of four with vision of $\frac{20}{100}$; one with vision of $\frac{20}{200}$, and in none others. The mean of the vision noted before discission in the recorded cases was $\frac{20}{80}$; after discission, $\frac{20}{30}$. It is, however, just to state, that the recorded vision before discission was taken about three weeks, on an average, after the primary operation, and that there was undoubtedly considerable improvement in vision before the discission was performed. Certainly the improvement could not have brought the mean vision before discission to more than $\frac{20}{40}$. In two cases the vision after was less than before discission.

In one case, that of a Morgagnian cataract, the vision before discission was $\frac{20}{40}$, after discission $\frac{20}{100}$. The operation was accompanied by some dragging on the ciliary processes by traction on the capsule, which was followed by a mild, slow cyclitis. The tension of the globe became slightly reduced, and opacities appeared in the vitreous which did not clear up. In one case the vision was reduced from $\frac{20}{40}$ to $\frac{20}{50}$ because of a thickening of some undivided tough bands in the capsule which crossed the pupillary area. In forty-six cases the vision was improved by discission. Reaction (inflammatory) occurred in one case, necessitating a stay in the hospital of eight days, because of slight infection of the wound from which a mucoid shred of tissue protruded. The shred of tissue was observed on the third day. The cautery was applied and recovery followed. Glaucoma after discission was not observed. The usual time in hospital after the secondary operation was three days.

The loss by panophthalmitis occurred in the person of a patient of very uncleanly habits, who was operated upon at the New York Eye and Ear Infirmary on May 12, 1892, in the afternoon. When the effect of the cocaine was passing off and the patient began to experience the slight pain that usually follows, he became excited, pulled his bandage off, and got out of bed. This procedure was repeated three times before night. On inspection on the following day the wound was found to be infected. The operation was perfectly smooth, and the healing would undoubtedly have progressed favorably had the patient controlled himself.

Simple extraction was performed in seventy-nine of the one hundred cases. Sixty-nine (eighty-six per cent.) in the uncomplicated and ten (fifty-five per cent.) in the complicated cases. The greater number of iridectomies were performed in the early part of this series when the writer thought that iridectomy was required in a much greater number of cases than he does now.

Loss of Vitreous.—Slight loss of vitreous occurred in two cases of simple extraction and in one with iridectomy in the uncomplicated cases, and in two without and two with iridectomy in the complicated cases. All the patients made good recoveries.

Prolapse.—Prolapse of iris followed in two of the cases of uncomplicated, and in two of the complicated cases of simple extraction. The prolapse in one of the cases of uncomplicated cataract occurred six days after the operation, and was due to violent rubbing of the eye on the part of the patient. The anterior chamber had become restored, pupil central, iris reacted to the stimulus of light. Prolapse occurred in five per cent., if all cases are included.

Incarceration of the Iris.—Adhesion to the wound without prolapse occurred in two cases (2·5 per cent.), rendering the pupil slightly eccentric.

Iritis of a mild type followed extraction in one case of uncomplicated and in two cases of complicated cataract. In no case did occlusion of the pupil occur.

Two partly dislocated lenses were removed without iridectomy and with the loss of only four or five drops of vitreous humor.

Stripped keratitis occurred in one case only. It was of a mild type and disappeared in a few days. While the use of irritating sterile lotions may produce stripped keratitis, the writer is of the opinion that infection plays an important rôle in a large number of the cases.

Immature cataract, in the sense that the lens substance was far from being entirely opaque, was removed in eight cases by the simple method, in one with iridectomy. The visual results were $\frac{20}{20}$ or better, six; $\frac{20}{30}$ two; $\frac{20}{70}$ one.

Zonular cataract was removed by the simple method of extraction in three cases, with visual results of $\frac{20}{20}$ + in two and $\frac{20}{30}$ in one.

The average time in hospital was thirteen days and three quarters (13·75).

In sixteen of the cases the operation was done in an open ward of a general hospital. All the wounds healed kindly.

154 MADISON AVENUE.

A CASE OF
CASTRATION FOR PROSTATIC OVERGROWTH;
OBSERVATION FOR FOUR MONTHS.*

By JOHN P. BRYSON, M. D.,

ST. LOUIS.

L. L. B., aged seventy-four, farmer, married, of good family and personal history, and moderately good health, came under my care over five years ago. The history showed that symptoms of prostatism began when he was fifty-six and had slowly but steadily increased. At that time, 1888, the urine was clear, and normal in quantity and character; there were three ounces of residual urine, and he rose twice during the night to urinate. Diurnal urination was nearly normal in frequency, and the energy of the detrusor was but little diminished. Things continued to grow worse with him until, in January, 1894, the residual urine having increased to eight ounces, the nocturnal frequency to six times, the diurnal to every hour and a half, the force of the stream greatly diminished, and the general health considerably affected by the broken rest, he came into the hospital with the view of having an operation done. In the fall of 1893 traces of albumin, a few granular and hyaline casts, and some pus appeared in the urine; the quantity was increased and the specific gravity reduced. Evacuatory catheterism failed to lessen the nocturnal frequency, increased the pyuria, and caused irritation of the vesical neck.

In the fall of 1893 cystoscopy revealed irregular prostatic projections from the posterior lateral segments, greatest on the left side, a trabeculated bladder, gaping ureteral openings, and but slight evidences of cystitis.

A week's study of the case in hospital in January, 1894, revealed slight pulmonary emphysema, a weak and dilated heart, and an irregular pulse. The systematic use of the catheter again failed to reduce the frequency of urination. I advised against operation, and the patient returned to his home in the suburbs, and came to my office twice a week, when the bladder was washed with a 1-to-2,000 silver-nitrate solution, and he had general tonic treatment. There was steadily increasing difficulty in getting the catheter through the prostate, and finally a conical sound was employed with no apparent benefit. Pyuria, evidences of renal inflammation, frequency, and residual urine increased, and the size of the catheter had to be diminished. The evidences of advancing prostatism were such in January, 1895, that the patient accepted the suggestion of castration as the only advisable means of relief, which he was the more willing to accept since for two years past there had been complete absence of sexual desire and power. Moreover, there was abundant evidence to him of an increasing difficulty in the introduction of the catheter, and he feared sudden retention at a time when he could not get skilled help.

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* Read before the American Association of Genito-urinary Surgeons, at Niagara Falls, May 28, 1895.

The patient was again examined as follows: Cystoscopy revealed a like condition to that already described, except that the prostatic projections were more reddened, probably from inflammatory changes. Rectal touch revealed a prostate of probably thrice the normal size, whose posterior outlines could not be easily made out. The enlargement seemed uniform and symmetrical, and no great amount of tissue appeared to lie between the steel sound in the prostatic urethra and the finger in the rectum. The catheter revealed a detrusor so weak that it did not lift the stream of urine more than seven inches above the base of the bladder with the patient in the recumbent position, except by the use of the accessory muscles of urination.

The length of the prostatic urethra was now estimated by the following method: With about five ounces of urine in the bladder—its full capacity—a No. 16 French woven catheter with a short, sharp, single elbow and a single eye near its tip, was introduced until urine flowed, then slowly withdrawn until it ceased. This point was regarded as the posterior urethral orifice. As it was withdrawn a finger in the rectum easily detected the elbowed tip as it reached the apex of the gland and came into the *pars membranacea*. Estimated in this way, using the *meatus externus* as the fixed point, the *pars prostatica* measured two inches and a quarter. The residual urine was at this time two ounces, and the extreme bladder capacity five ounces. Two years and a half previously the figures were six and fourteen respectively.

On December 31, 1894, the uranalysis showed: Density, 1·016; slightly acid; heavy trace of albumin; considerable pus; a few hyaline and slightly granular casts, with an occasional leucocyte and epithelial cell attached. On January 16, 1895, the record was: Specific gravity, 1·014; acid; heavy trace of albumin; considerable pus; few red blood cells. These are fair examples of the condition of the urine for the past half year.

Operation on January 17, 1895. Owing to the condition of the heart, lungs, and kidneys, chloroform and ether anæsthesia was deemed unsafe, and cocaine analgesia was employed, after a method described by me in a communication to the *New York Medical Journal* of April 27th last. Both testicles were ablated without pain, and the patient made a satisfactory recovery. On the tenth day, when about to leave the hospital, he was seized with a severe attack of Russian influenza, then extensively prevailing in the city. The bronchitis was severe, and the heart so weakened as to require the active exhibition of strychnine to sustain it. Recovery was slow, and it was three weeks before the patient was able to return to his home, a few miles in the country.

The hospital record shows that up to the attack of influenza (ten days) the frequency of urination both day and night was unchanged, the intervals averaging a little less than two hours, as before the operation. The quantity was also about the same (fifty to fifty-five ounces *per diem*, four to five ounces each urination). The attack of acute disease increased the frequency to hourly urinations, and slightly increased the daily quantity to about sixty ounces. As convalescence set in, about the twenty-fifth day after the operation, the frequency gradually decreased until a return was made to the rate prevailing before the operation—viz., to intervals of three hours during the day and five to six times during the night. At this rate it still remains, the daily quantity of urine being slightly increased, its specific gravity being greater, and bacterinuria having appeared on the scene after the attack of influenza.

On February 15th the uranalysis showed: Specific gravity, 1·018; heavy trace of albumin; considerable pus; some hyaline and slightly granular casts; many bacteria. On March 13th the record reads: Specific gravity, 1·020; alkaline (after standing twenty-four hours); trace of albumin; much pus; no casts.

At this date the catheter discovered one ounce of residual urine after the patient had voided four ounces. Catheter entered easier than before operation, but still encountered slight obstruction in prostatic urethra. On March 21st there was a half ounce of residual urine, containing the same amount of pus and bacteria.

The uranalysis has continued to show the same state of things up to the present time; the bladder has still a capacity of about five ounces; nocturnal and diurnal frequency has remained stationary, and the residual urine fluctuates between a half and a quarter of an ounce. The patient has improved somewhat in his general condition, and has put on a little more flesh. He reports the stream easier to start, especially at night, and he has lost his haunting dread of sudden retention.

Measurement of the prostatic urethra made on May 16th, after the same plan and with the same instrument described above, showed the *pars prostatica* to have a length of one inch, no change in the energy of the detrusor, and a prostate mass estimated by rectal touch to be of about the size of a chestnut, fibrous, flabby, and difficult to outline.

My last observation was on May 23d at my office. Having waited until the desire to urinate was strong, he passed three ounces and half, which was cloudy with pus and bacteria. He was then placed on the table, and the catheter drew five drachms of urine more cloudy than the first. The catheter (No. 20 F.) was cramped in the membranous sinus, but caused no pain. Uranalysis: Specific gravity, 1·014; one per cent. (moist) albumin; much pus; numerous bacteria; rarely a cylindroid; hyaline and slightly granular casts; epithelia scanty.

The patient, a very accurate and intelligent self-observer, reports that during the eight hours he attempts to give to rest he rises six times to urinate. Diurnal urination about every two hours. The stream starts promptly on effort and flows steadily but with feeble energy.

Résumé.—A man, aged seventy-four years, shows first evidences of beginning prostatism at the age of fifty-six, which slowly increase during the succeeding eleven years, until the tidal urine reaches twelve ounces, while the residual is three ounces (dilatation of the bladder from obstructive prostatic overgrowth). He rises thrice at night. In the following six years the residual urine increases to six ounces, the tidal diminishes to about two ounces and a half, and the diurnal and nocturnal frequency increase to eighteen and six respectively, with marked diminution of detrusor energy (evidences of increasing obstruction, with thickening and degeneration of the bladder walls). Cystitis and a mild pyelonephritis develop. Two separate attempts to enter on catheter life fail on account of increased irritation, difficulty in entering the bladder, and aggravation of cystitis. Dilatation of the heart and pulmonary emphysema supervene. All unfavorable symptoms increasing, castration is done for relief.

Demonstrable Results.—Marked and satisfactory diminution in the size of the enlarged prostate, without change in frequency of urination day or night, without alteration of tidal, but with slight decrease of residual, urine. Pyuria, bacterinuria, and pyelonephritis remain practically the same. In a few words, the double orchidectomy has caused an almost complete atrophy of the prostate gland without effecting any change in a chronically inflamed and degenerated bladder, and equally without curing or even benefiting a chronic pyelonephritis from extension.

A CASE OF TETANUS IN AN INFANT AFTER CIRCUMCISION, *WITH RECOVERY.*

By A. SCHIRMAN, M. D.

The study of tetanus as a subject of investigation is an important one in regard to the diagnosis of a disease which is characterized by such terrible symptoms and rapid development. If the ætiology of tetanus is still obscure it is because the investigations as to the origin of tetanic convulsions is yet in its infancy. Usually, in ordinary physiological conditions, apart from certain irritations affecting the organism, the force of its reaction exists to a certain extent; in tetanus the organism responds with tonic spasms all over the body, even if the injury is a comparatively small one. We do not yet know under what conditions the body reacts with proportionate power from a feeble irritation. It is a question whether the cause of this irritation is in the patient himself or in the character of the injury. The onset of this disease in most cases occurs without warning, and, according to the amount of irritation, may be classified as traumatic or idiopathic; it is also undoubtedly provoked by other affections.

A case of tetanus which came under my observation was that of a girl ten years of age. She was anæmic and had suffered with *Ascaris lumbricoides* for some time before I saw her. After expulsion of the worms she recovered completely.

The tetanus of the newborn, according to many authors, has no specific cause, and, as in adults, is a reflex of the body caused by thermic and mechanical irritation—for instance, from improper care of the umbilical wound or from placing the child in a bath that is too hot or too cold.

A case recently came under my observation which is interesting on account of its special cause, and also because of the speedy recovery, a thing which rarely occurs:

The patient, a boy, was born on November 2, 1894. The mother was a healthy woman, but the father was addicted to the excessive use of liquor. No asphyxia was present. A week later circumcision was performed by the Mohel,* who did it in a very primitive manner. The wound was dressed with cotton saturated in an acid, dusted with powder, and then covered with a rag. On the following day the dressing was removed by the physician, who had to tear it off, as it had dried on the wound. This irritated the child, who became very restless and cried a good deal. The mother said she noticed that the child's head had become entirely stiff, and was held in a vertical position. On the 11th of November I was called to see the little patient, and found that he had an attack of trismus and could not nurse, and pouring milk from a teaspoon into its mouth was impossible. Its legs and arms became stiff, and this condition was followed by tonic contractions of the voluntary muscles and by distinct convulsive paroxysms. The child was emaciated, its abdomen was contracted and flattened, the eyes were fixed, and the angles of the mouth were wrinkled. The head and the body arched backward, owing to the rigidity of the muscles of the trunk and of the neck. The masseteric muscles were tense and firm, the jaws tightly closed, the pulse accelerated, and the respiration laborious. On examination, the umbilical wound did not present anything abnormal. The limbs showed spasmodic contraction, the outline of their muscles being plainly visible. The legs were rigid and extended like sticks, without any motion whatever; the arms were bent at the elbow joints, and became more flexed when any attempt was made to extend them. The urine was normal and contained no albumin, and the temperature did not rise above 99° F. during the entire time. Notwithstanding the apparent gravity of the symptoms, I concluded that, in view of the fact that fever was absent and that there was no albumin in the urine, recovery was still possible. I therefore ordered small doses of a solution of chloral hydrate for injection into the rectum; also some brandy, with extract of conium, potassium bromide, warm baths twice a day, and applications of hot sand bags. Special care was taken in the local treatment of the wounded glans penis with antiseptics. On the 12th of November the condition of the child's limbs was a little better; the spasms of the masseteric and other muscles became less marked, so that the child could be fed with a spoon. On the 22d the wrinkled condition of the face disappeared, the head became freely movable, and the child was able to nurse from an elastic finger bottle. On December 1st the spasms of the lower limbs and the contractions of the arms entirely subsided. The little patient was very much improved and perfectly able to take nourishment; he slept well, increased in weight, and the grave symptoms entirely disappeared.

From this case the following conclusions may be drawn: That hydrotherapy may be successfully employed in the treatment of this disease; that when the child's mouth can not be opened remedies given by the rectum are efficacious; and that tetanus in such cases may be prevented by having the operation performed by a physician under antiseptic conditions.

117 Madison Street.

Resection of Meckel's Diverticulum.—M. Kirmisson reported to the Société de Chirurgie, Paris, on November 7, 1894 (*Progrès médical*), his method of resection of the diverticulum ilei. He dissects up a collar of skin around the opening in the umbilicus, and then follows the duct down to its opening in the ileum. The duct is then cut off close to the gut, the opening closed with Lembert sutures, and the abdominal wound closed as usual. His report brought up the subject of umbilical hernia, and the opinion of the society was almost unanimous in favor of radical operation in infancy for this condition.

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* The Hebrew title for one who performs circumcision

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, AUGUST 3, 1895.

MEDICAL JOURNALS AND DRUG MANUFACTURERS' ADVERTISEMENTS.

Largely in consequence of the wishes of the Medical Society of the State of Pennsylvania, as most of our readers are doubtless aware, at the last meeting of the American Medical Association, held in Baltimore about three months ago, the editor of the association's *Journal* was officially reported by the trustees to have been instructed that, on the termination of current contracts, he was not to accept any advertisement of medicinal preparations unless a formula giving the official or chemical name and quantity of each ingredient was furnished for insertion as a part of the advertisement, and it was reported that during the year no advertisements of "secret remedies" had been accepted that were not accompanied by a formula. Thereupon the Medical Society of the State of Pennsylvania passed resolutions congratulating the American Medical Association upon its action in the matter and directing that a committee should be appointed to communicate with the editors and publishers of medical journals in the United States, to call their attention to this action of the American Medical Association, and to request them to accede to the wishes of the profession by adopting a similar rule. The committee has issued a circular embodying this request, addressed to the editors and publishers of medical journals.

We have examined the advertising pages of several recent issues of the *Journal of the American Medical Association*, and we find indeed that almost every advertisement of a proprietary preparation set forth in them does include a formula, but almost without exception these formulæ are insufficient to take away from the preparations the character of secrecy. To the best of our understanding, they do not conform to the spirit of the American Medical Association's instructions to the editor of the association's *Journal*, but if the trustees and the editor are satisfied with them, other journals have no business to meddle in the matter. In view of the facts, however, the other journals may be inclined to consider before acting in accordance with the Pennsylvania society's request. The association's *Journal* for July 27th says that immediately after the Baltimore meeting a letter was sent to every firm advertising medicinal preparations in its columns, giving information of the association's action and asking for the formula for publication. "Several of them," says the *Journal*, "have responded by sending the name and amount of each ingredient in the compound, according to the letter of the association resolution, some have asked for time to consult absent managers, and some have refused." We have only to say that we can not see why any of them should have refused to give such formulæ as those that have been published, unless it was from a natural repugnance to pretending to give a thing while really giving only its shadow. It seems to us that the result of this crusade is likely to be an increase of hypocrisy, and little else.

MINOR PARAGRAPHS.

LUSK'S *MIDWIFERY* IN ARABIC.

It is unnecessary to cast about for signs of the appreciation in which Dr. Lusk's *Midwifery* is held, but it is interesting to note a project to have it translated into Arabic. It seems that the vice-principal of the Egyptian Government School of Medicine in Cairo has been directed by the Minister of Public Instruction in Egypt to arrange for the translation of a text-book of midwifery into Arabic for the use of the students of medicine and the girls of the School for Midwives. Accordingly the vice-principal has asked Dr. Lusk to sanction the translation of his work. In his letter he says: "I am convinced that I can not do better for our students, both male and female, than to offer them the means of learning from a book which I have always found of the greatest value, and which was a perfect boon to me in my student days."

THE WORK OF THE MARINE-HOSPITAL SERVICE FOR THE YEAR 1893.

The *Report* embraces two volumes, one published in 1894 and the other in 1895, containing 307 and 408 pages respectively. Besides the usual statistical information and accounts of individual cases of injury and disease, there is an exceedingly valuable Report of the Commission to Investigate the Cholera Epidemic and the Danger of Contagious Diseases from Foreign Countries, by Dr. Walter Kempster, special commissioner, and Surgeon Fairfax Irwin, suitably illustrated with maps, charts, and tables. These volumes demonstrate anew the efficiency of the service, not only in its original province, but also in the field of quarantine and sanitation that has been intrusted to it for a number of years past.

A SANATORIUM FOR WHOOPING-COUGH.

The authorities of Paris, we learn from the *Journal des praticiens*, have under consideration a project for establishing a special sanatorium for the study and treatment of whooping-cough, to be situated in the country. This is said to be in pursuance of their plan of special rural sanatoria.

FLORA AND FAUNA.

We find in a report of the proceedings of a meeting of the Leipsic Obstetrical Society, published in the *Centralblatt für Gynäkologie*, an abstract of a paper on The Flora of the Female Genital Tract in Health and in Disease. Somebody might appropriately supplement it with an essay on the Fauna of the Pubes.

ITEMS, ETC.

The Mississippi Valley Medical Association.—The Detroit meeting will be held on September 3d, 4th, 5th, and 6th. The preliminary programme includes the following papers: The Prognosis in Syphilitic Diseases of the Nervous System, by Dr. Charles J. Aldrich, of Cleveland; The Abortive Treatment of Typhoid Fever, by Dr. John Aulde, of Philadelphia;

The Ripening of Cataract, by Dr. James M. Ball, of St. Louis; Legitimate Pharmacy, by Dr. William F. Barclay, of Pittsburgh; Asepsis in Bladder and Prostate Operations, by Dr. William T. Belfield, of Chicago; The Results and Conclusions Derived from an Experience of One Hundred and Sixty-five Appendicectomies, by Dr. A. C. Bernays, of St. Louis; Psychology in Medicine, by Dr. A. P. Buchman, of Fort Wayne, Ind.; Toxic Amblyopia due to the Excessive Use of Tobacco, by Dr. A. E. Bulson, Jr., of Fort Wayne; Two Successful Operations for Insanity, with Remarks, by Dr. George W. Cale, of St. Louis; A Neurotic Form of Wryneck, by Dr. Archibald Church, of Chicago; Laryngitis from a Rhinological Standpoint, by Dr. L. C. Cline, of Indianapolis; Ulcers of the Leg—All can be Cured, by Dr. Carter S. Cole, of New York; The Technique of Abdominal Hysterectomy, by Dr. A. H. Cordier, of Kansas City; The American Diagnosis and Treatment of Fatty Degeneration and its Masquerades, by Dr. Ephraim Cutter, of New York; The Treatment of Acute Inflammation of the Middle Ear and Mastoid Process, by Dr. Edward B. Dench, of New York; Syphilis and its Treatment, by Dr. C. Travis Drennen, of Hot Springs, Ark.; The Ordinary Duties of the Obstetrician, by Dr. John Milton Duff, of Pittsburgh; Pyelitis, with Report of a Case, by Dr. P. M. Forshay, of Cleveland; Uterine Fibroids—When to Operate, by Dr. D. Tod Gilliam, of Columbus; Some Sequels of Grippe, by Dr. F. C. Heath, of Indianapolis; The Radical Cure of Hernia, by Dr. J. W. Heddens, of St. Joseph, Mo.; Excision of the Auditory Ossicles, by Dr. Robert C. Heflebower, of Cincinnati; Puerperal Sepsis—When is Hysterectomy Indicated? by Dr. Bayard Holmes, of Chicago; Spot Specialism, by Dr. C. H. Hughes, of St. Louis; Trephining the Spine for Pott's Disease, with Report of Eight Cases, by Dr. Emory Lanphear, of St. Louis; Vertigo, with Report of a Labyrinthine Case, by Dr. H. M. Lash, of Indianapolis; The Removal of Persistent Nodules after Epididymitis, by Dr. Bransford Lewis, of St. Louis; Fracture of the Femur, by Dr. J. E. Link, of Terre Haute, Ind.; The Bicycle from a Medical Standpoint, by Dr. I. N. Love, of St. Louis; the Annual Address in Surgery, by Dr. Theodore A. McGraw, of Detroit; The Comparative Value of the Medical and Surgical Treatment of Appendicitis, by Dr. F. Maass, of Detroit; Peritonitis, by Dr. J. B. Murphy, of Chicago; A Medico-legal Consideration of Hysteria, by Dr. Frank P. Norbury, of St. Louis; Post-climacteric Hæmorrhages, by Dr. H. O. Pantzer, of Indianapolis; the Annual Address in Medicine, by Dr. William Pepper, of Philadelphia; The Anomalies of the Ear Degenerates, by Dr. Frederick Peterson, of New York; Cœliotomy in Purulent Peritonitis, with Report of a Case, by Dr. Miles F. Porter, of Fort Wayne; The Revelations of the Trendelenburg Position, by Dr. Joseph Price, of Philadelphia; The Skin Diseases Amenable to Galvanism, and Local Anæsthesia by Faradaism, by Dr. B. Merrill Ricketts, of Cincinnati; A Complication in Cataract arising from Diabetes, Albuminuria, etc., by Dr. J. O. Stillson, of Indianapolis; How shall we Rear our Babies? by Dr. J. H. Taylor, of Indianapolis; Auto-intoxications, by Dr. Frank J. Thornbury, of Buffalo; Pulmonary Tuberculosis—its Early Diagnosis, by Dr. Edward F. Wells, of Chicago; Rheumatism in its Relation to the Eye, by Dr. W. K. Wheelock, of Fort Wayne; the President's Address, by Dr. W. N. Wishard, of Indianapolis; and papers by Dr. John Eliot Woodbridge, of Youngstown, Ohio, Dr. John A. Wyeth, of New York, Dr. E. Gustave Zinke, of Cincinnati, Dr. W. C. Weber, of Cleveland, Dr. Leon Straus, of St. Louis, Dr. Thomas O. Summers, of St. Louis, Dr. William Porter, of New York, Dr. Edward F. Jenks, of Detroit, Dr. J. M. Mathews, of Louisville, Dr. Curran Pope, of Louisville, Dr. Eugene Fuller, of New York, Dr. William A. Galloway, of Xenia, Ohio, and Dr. Robert H. Babcock, of Chicago.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 30, 1895:

DISEASES.	Week ending July 23.		Week ending July 30.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	18	9	12	2
Scarlet fever	38	2	39	6
Cerebro-spinal meningitis	3	2	3	1
Measles	193	18	108	16
Diphtheria	195	28	160	33
Small-pox	0	0	0	0
Tuberculosis	56	111	124	124

Change of Address.—Dr. Reynold W. Wilcox, to No. 749 Madison Avenue, New York.

Society Meetings for the Coming Week:

Monday, *August 5th:* Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); German Medical Society of the City of New York; Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society.

Tuesday, *August 6th:* Buffalo Medical and Surgical Association; Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Cattaraugus, N. Y. (quarterly); Hudson, N. J., County Medical Society (Jersey City); Hampden, Mass., District Medical Society (Springfield); Androscoggin, Me., County Medical Association (Lewiston); Medical Society of the University of Maryland (Baltimore).

Wednesday, *August 7th:* Medical Society of the County of Richmond (Stapleton); Bridgeport, Conn., Medical Association.

Thursday, *August 8th:* Brooklyn Pathological Society; South Boston, Mass., Medical Club (private); Medical Society of the County of Cayuga, N. Y.

Friday, *August 9th:* Medical Society of the Town of Saugerties, N. Y.; German Medical Society of Brooklyn; Cleveland, O., Medical Society.

Births, Marriages, and Deaths.

Married.

Foster—Hester.—In Tuskaloosa, Ala., on Wednesday, July 24th, Colonel Henry B. Foster and Miss Jennie Hemphill Hester, daughter of Dr. William Hester.

Died.

Hayward.—In Mississippi City, Miss., on Tuesday, July 23d, Dr. Harry Hayward, aged thirty-five years.

Jarvis.—In Willet's Point, N. Y., on Tuesday, July 30th, Dr. William Chapman Jarvis, of New York.

Mackie.—In Philadelphia, on Thursday, July 25th, Surgeon Benjamin Mackie, of the navy, aged fifty years.

McLean.—In San Francisco, on Thursday, July 11th, Dr. Samuel Merriweather McLean.

Letters to the Editor.

A PROTEST AGAINST ACCEPTING THE CONCLUSIONS OF HOSPITAL PHYSICIANS AS TO THE VALUE OF ANTITOXINE IN DIPHTHERIA.

Kansas City, Mo., *July 9, 1895.*

To the Editor of the New York Medical Journal:

Sir: When antitoxine for diphtheria was introduced to the medical profession, after being tested successfully in German and French hospitals, it led medical men to believe that a remedy had been devised which rested its claim upon a scientific foundation. It was therefore hailed with joy; but, alas! there come unfavorable reports from diphtheria hospitals both in this country and abroad, and it would seem from these statistics that its abandonment in the near future is liable to occur.

While these gentlemen in hospital practice are losing faith in antitoxine, hundreds of physicians in private practice are having astonishing results—results which they are quick to recognize, because they have never been able to obtain any such success by any other method of treatment, and these physicians are more firmly intrenched than ever in the great value of antitoxine when used early in the case; and in my opinion the clinician is the man to decide as to the true value of antitoxine in diphtheria, and not the men engaged in hospital or consultation practice. I desire to enter my protest against accepting the opinions of these "hospital physicians," who never see these cases until after the disease has been in progress for several days.

While I was in New York last spring, in conversation with Dr. Dillon Brown upon this subject, he said he did not think he would use antitoxine any more, as he had lost faith in its efficacy, and could get better results by the use of calomel fumigations. Dillon Brown has performed over a thousand intubations, and has a practice which is largely a consultation one. Naturally, seeing his cases late, and manifestly at an improper time for the use of antitoxine, conclusions arrived at from his own personal observation are liable to be erroneous.

In papers read before the New York Academy of Medicine by some of the physicians connected with the board of health, the employment of the antitoxine treatment was spoken of as having given the very best results, while Dr. Winters, of the Willard Parker Hospital, took a decided stand against the favorable report of these men, claiming that its benefits were of doubtful efficacy.

Last spring, while in Dr. Seibert's clinic at the German Dispensary, I saw several cases of diphtheria come into the clinic for treatment. These cases were recognized, the name and address were taken, and a postal card was then written notifying the board of health. Probably the next day a child would be landed in the Willard Parker Hospital, all consuming valuable time before using the remedy. If a culture had to be taken after the patient's entering the hospital, it is easy to see how valuable time was wasted, and it is no wonder that unfavorable results are being reported. In all the diphtheria hospitals in London unfavorable reports are being given out by the physicians in charge, while those engaged in private practice, who see these cases early, are having astonishing results, even in their laryngeal cases.

I know that many physicians will contend that those cases in which a diagnosis has been made without a culture are diphtheroid; yet if we admit the usual proportion of cases as being diphtheroid, still the results obtained by hundreds of practitioners are such that they will be slow to give up a remedy which has proved so efficacious.

In conclusion, I desire to again enter my protest against accepting the opinion of hospital physicians as to the efficacy of a remedy which has proved itself to be of such inestimable value in the hands of the family physician.

John W. Kyger, M. D.

RECUMBENCY IN LYING-IN WOMEN.

New York, *July 26, 1895.*

To the Editor of the New York Medical Journal:

Sir: "One swallow does not make a summer," but I am such a firm believer in the advantages of recumbency maintained for about a week after delivery, followed by semi-recumbency for from three to seven days longer, that I wish to relate a case in the hope of counteracting the influence of Dr. Rose's letter in your issue of July 20th, which I have already seen quoted elsewhere.

Some months ago I attended a poor woman in a normal confinement with her fourth child. Two days after delivery the "nurse" went on a spree, and I found my patient attending to her household duties and the care of her infant and three other children. At the end of ten days her condition seemed satisfactory and my attendance was discontinued.

Three or four months later I met her on the street and inquired about her health. She was suffering from complete prolapsus uteri, which had developed gradually without violence, and which she had never had before. Her perineal laceration had not been increased in this last labor, and I have always believed the prolapsus due to the early settling of the large, heavy, uninvoluted uterus into the pelvis, dilating the vagina and stretching its supporting ligaments until eventually, when it became small enough, there was nothing above or below to prevent its escape from the vulva. The objections to rising suggested by my case apply probably less during the first two or three days than for several days later. Sitting up in bed (or even out of bed) for the first micturition may be of benefit in aiding the expulsion of retained clots, as Dr. Rose remarks. It certainly aids micturition, and may be countenanced in cases with reliable cardiac action rather than permit overdistention or resort to the catheter. "Between two evils choose the lesser." And this momentary rising for a specific purpose has little bearing on the general question of recumbency. The main purpose of my communication is to emphasize the fact that an observation of patients beyond the actual lying-in period is necessary before we may consider such a question settled. Dr. T. Ridgway Barker's original article in the *New York Medical Journal* for July 6th expresses views which are safe and highly commendable.

J. Milton Mabbott, M. D.

EPIDIDYMITIS AS A COMPLICATION OF TYPHOID FEVER.

Lorain, O., *July 29, 1895.*

To the Editor of the New York Medical Journal:

Sir: Thinking it may be of some interest to the profession, I beg space to report instances of what I consider quite a rare complication of typhoid fever. I refer to two cases of epididymitis occurring during the early period of convalescence from typhoid fever. As the symptoms were similar, I will simply describe the first case:

C. T., aged eleven, had an ordinarily severe attack of typhoid fever in which the treatment was the expectant, symptomatic. During the third week, after the evening temperature had declined to 99·3° F., he complained of soreness and swelling of his "privates." His general condition was somewhat worse; temperature 101°, pulse rapid (140). The scrotum was found tense, hot, and extremely tender; the tenderness extended along the course of the spermatic cord of the left side. Closer examination showed that the epididymis was very large and tender in comparison with that of the right side. His bowels had been allowed to become quite constipated. He was freely purged with calomel and magnesium sulphate, the scrotum was elevated, and hot compresses were kept applied. An eighth of a grain of morphine was given for the extreme pain. At my next visit he was much better, and improvement continued quite rapidly.

The other case was in a patient aged twenty-eight years, and, though double, did not reach such a high grade. It also came during the third week. The treatment was essentially the same, but recovery was not so rapid, and at this date (six weeks after the beginning of the trouble) some little tenderness of the epididymis remains.

In neither case could urethritis be taken as the cause. The man denied any history, and no evidence could be found to support a suspicion.

Did they become infected through the blood current?

Edward V. Hug, M. D.

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Twentieth Annual Meeting, held in Baltimore on Tuesday, Wednesday, and Thursday, May 28, 29, and 30, 1895.

The President, Dr. Matthew D. Mann, of Buffalo, in the Chair.

(*Concluded from page 19.*)

Abdominal Section for Puerperal Septicæmia.—In the further discussion of Dr. Baldy's paper on this subject Dr. Andrew F. Currier, of New York, said that where the suppuration and inflammation were extraperitoneal, operative measures were indicated. The difficulty about operating was that many cases were not seen by the surgeons until later than the first week after confinement, and, as a matter of fact, up to this time there was often no apparent need for operative interference.

Dr. Noble, of Philadelphia, said that ordinarily he would perform hysterectomy in cases in which the patient had already become very thoroughly septic. To be of any service, puerperal hysterectomy must be done within a week or two after confinement.

Dr. Henry C. Coe, of New York, described a case of puerperal peritonitis typically suitable for operation in which he had operated only a week before. Notwithstanding the very favorable conditions under which the operation had been done, the patient being in excellent condition and the anatomical condition being that of the congestive stage of peritonitis without organized adhesions, the patient had suddenly collapsed about ten hours after the completion of the operation. An acute salpingitis had been found, and the Fallopian tube had been removed along with the uterus. There seemed to be a great liability to sudden collapse in these cases of abdominal sepsis. Considering the result in this exceptionally favorable case, he felt that it was impossible to select clinically the stage at which the infection could be said positively to be localized.

Dr. A. Lapthorn Smith, of Montreal, said he had reported a successful case of hysterectomy for puerperal septicæmia. In the milder cases he had found the use of a drainage wick especially valuable and far superior to gauze packing. Where drainage and irrigation failed to relieve the symptoms, an operation afforded the only chance for recovery.

Dr. Baldy said that the class of cases in which hysterectomy was appropriate was an exceedingly small one. He could see no advantage from frequent irrigations of the uterus in cases seen as late as at the end of the first or second week, because by this time the uterine walls were already infiltrated with pus.

The President's Address.—The president, Dr. Matthew D. Mann, of Buffalo, after referring to the work of the society and the problems that would claim the serious and earnest attention of the society in the near future, devoted the remainder of his address to an attempt to throw some light on the origin of certain pelvic disorders.

Patients with these disorders, he said, frequently came to the gynæcologist complaining of a great variety of symptoms, and yet, beyond perhaps a discharge from the cervix or a tender and prolapsed ovary, the physical examination revealed no serious lesion in the pelvic organs. A key to the fundamental difficulty would be found in many such cases if the physician would interrogate the kidneys. The urine would usually be found to be excreted in quantities much below the normal, to be decidedly acid, and frequently to contain an excess of uric acid. Less frequently, although not rarely, the urine would be clear and of low specific gravity, denoting a decrease in the elimination of urinary solids. He had found that many symptoms usually referred to the bladder would disappear if measures were taken to neutralize the acidity of the urine. Another common cause of pelvic disorders, and one which had received comparatively little attention from the profession, was improper dress. The abdominal surgeons had frequent opportunities to observe the downward displacement of the viscera produced by even very moderate constriction at the waist. Our text-books on physiology usually stated that respiration in women was naturally different from that in men, but modern investigation had shown that in whole races in which the waist had not been constricted by improper dress the function of respiration was identical in the two sexes. Improper dress, by interfering with the general development, often led to disturbances of digestion and hence to faulty nutrition.

Renal Insufficiency in Gynæcological Cases.—Dr. James H. Etheridge, of Chicago, in a paper with this title, discussed only the question of functional insufficiency and its bearing on many cases commonly seen by gynæcologists. By a table constructed for him by a physiologist it was shown that a healthy woman, weighing ninety pounds, should excrete seven hundred and eighty-nine grains of urinary solids every twenty-four hours, and that a woman weighing a hundred and ten pounds should excrete nine hundred and sixteen grains in the same time. The quantity of urinary solids excreted each day varied with the weight of the body, and was from five hundred to eleven hundred grains. He had observed very frequently that when the quantity of urinary solids was decidedly diminished the nervous system gave abundant evidence of this renal insufficiency. The quantity of urinary solids excreted could readily be determined by multiplying the last two figures of those expressing the specific gravity by the number of ounces of urine voided in the twenty-four hours, and multiplying this product by 1·1.

Dr. A. J. C. Skene, of Brooklyn, said he was well aware of the very important part played by renal insufficiency in both medical and surgical cases. Deranged innervation and reflex irritation seemed to be prominent in the causation of renal insufficiency. This condition was met with in two distinct classes of patients—viz., the neurasthenic and the lithæmic individuals.

Dr. Howard A. Kelly, of Baltimore, presented an analysis of twenty-one recent gynæcological operative cases showing the relation of renal insufficiency to this class. It was shown that the quantity of urine usually fell to about half the normal amount after the operation, but that the quantity of solids remained practically unchanged. It was some days before the quantity of urine returned to the normal.

Dr. Willis E. Ford, of Utica, N. Y., said that it was generally maintained by neurologists that the urine was subject to marked fluctuations in all cases of ovarian disturbance, but, as the same changes in the urinary secretion were observed in male neurasthenics, he did not think too much importance should be attached to the influence of ovarian irritation.

Dr. Baldy did not believe that these patients suffered from gynæcological troubles because of the renal insufficiency.

Dr. W. Gill Wylie, of New York, said that for many years he had noticed this scantiness of the urine after operations, and had been in the habit of trying to avert it by giving enemata of water.

Dr. Bache McE. Emmet, of New York, said that if the patients underwent a proper course of preparatory treatment, they would not exhibit this renal insufficiency after operations.

Dr. A. Lapthorn Smith believed that many of the vague pains of which women complained were due to deposits of uric acid, and that they could be relieved by insisting on the very free ingestion of water.

Dr. Etheridge said that if he found that the daily quantity of urinary solids was reduced about fifty per cent., he preferred to postpone a contemplated operation for two or three days.

Indications for Total Extirpation of the Uterus by the Vagina.—Dr. Charles Edward Jacobs, of Brussels, in a paper with this title, stated that vaginal hysterectomy was indicated in uterine cancer, in fibroids of the uterus, in extra-uterine pregnancy, in total genital prolapse, in chronic disease of the uterus and its appendages, in inflammatory disease of the appendages, and in diseases of the uterus after abdominal operations. He had done 403 vaginal hysterectomies, with 391 "operative cures" and 12 deaths, or a mortality of 2·9 per cent. He advocated extirpation for uterine cancer when the uterus was free and there was no evidence of the disease having extended beyond. In his experience it had been exceptional for uterine fibroids to disappear after the menopause. As the artificial menopause was at best very uncertain in its effect, and as medicinal treatment in these cases almost always gave bad results, an operation should be advised as early as the vaginal operation could be done. As he believed that in cases of extra-uterine pregnancy the appendages on both sides were always diseased, he advocated total removal by the vagina as early as possible. Out of his 403 hysterectomies by the vagina, in 9 there had been fistulæ—5 intestinal, 3 vesical, and 1 urethral. His conclusions were: That total extirpation through the vagina was indicated in uterine cancer at the beginning, in uterine fibroids, and in extra-uterine pregnancy, in total abortions, and in total genital prolapse; that it became the elective operation in bilateral suppurative or non-suppurative disease of the appendages; that it was indicated in chronic and incurable diseases of the appendages; and that it was not a more dangerous operation than laparotomy.

Vaginal Hysterectomy for Uterine Myomata and Diseases of the Annexa.—Dr. William H. Wathen, of Louisville, in a paper on this subject, emphasized the fact that all cases were not suitable for an operation through the vagina, and that the great difficulty was to decide just when a given case was suitable for such an operation. Abscesses in the broad ligament could be most easily, safely, and thoroughly drained through the vagina. In the worst cases of operation through the vagina the mortality was no greater than that from laparotomy, and he felt confident that in the future the death-rate from vaginal hysterectomy in properly selected cases would be much less than could be reported by the most expert laparotomist of the present time.

The Conservative Surgical Treatment of Parametric and Perimetric Septic Disease.—Dr. Ferdinand Henrotin, of Chicago, read a paper in which he said that in every case of septic disease demanding the removal of the Falloppian tubes and the ovaries the uterus also should be removed, as its removal added nothing to the mortality and insured a more perfect cure. During recent years, whenever pelvic diseases had given evidence of having extended beyond the uterus, it had been his practice to make a small incision through the vagina just behind the cervix, and, having dilated this opening, to explore the neighboring region with his finger. If an accumulation of pus was detected—and an ovarian abscess was often the first evidence of a septic infection having extended beyond the uterus—it could be readily drained through the vagina. This method of treatment had proved eminently successful in his hands.

Dr. R. Stansbury Sutton, of Pittsburgh, showed some specimens that he had removed by vaginal and abdominal hysterectomy, and referred to the question of removing the gravid uterus when it was encountered during an operation for fibroids. He said that this question had confronted him on three occasions, and he had in each instance removed the uterus and the patient had recovered.

Dr. Montgomery, of Philadelphia, said that the present low mortality, the satisfactory convalescence, the excellent drainage, and the absence of ventral hernia as a sequela were factors that plainly indicated that the vaginal route was preferable to the abdominal one in hysterectomy. He did not consider it justifiable to remove the uterus for an ectopic gestation on one side, or desirable to do this in every case of bilateral disease of the appendages. It was not invariably necessary to remove the uterus because it was the seat of fibroids.

Dr. Baldy said that ventral hernia did not follow the abdominal operation in more than two per cent. of the cases. The slower convalescence was rather an advantage, for it was not wise to allow these patients out of bed for at least a month. His own experience indicated that the vaginal operation was slower and much more difficult than abdominal hysterectomy. A collection of seven hundred and twenty-four vaginal hysterectomies, done by eminent operators in various parts of the world, gave a mortality of 4·6 per cent., whereas a collection of two hundred and twenty-four abdominal hysterectomies, done by eminent American operators, gave a mortality of only 2·7 per cent.

Dr. William M. Polk, of New York, said that, while hysterectomy was more difficult by the vaginal than by the suprapubic route, the vaginal operation for purposes of exploration alone could hardly be surpassed for simplicity and ease of execution. In about fifty per cent. of the cases the appendages were not accessible, however, except through the anterior fornix. The method of treating early stages of inflammation of the uterus and its appendages by the vaginal route, as recommended by Dr. Henrotin in his paper, was such an important contribution to our resources that the society should feel deeply indebted to him for presenting it. In the removal of tumors by the infrapubic route it would be found easier, when working deep in the pelvis, to secure the bleeding points low down by ligatures, leaving the higher vessels to be controlled by clamps.

Dr. Gordon, of Portland, Me., said that his experience with the vaginal method had not been satisfactory, and he did not believe as good work could be done by touch as by sight. The drawing down of the ovaries for exploration was objectionable, for in case it was found that these organs did not require removal, the prolapse of the ovaries thus produced could not easily be rectified.

Dr. Wylie said that he thought general surgeons would always prefer the abdominal method. He had employed the infrapubic method in seventy-four selected cases, fifty-five of them cases of cancer, and had had only one death.

Dr. J. E. Janvrin, of New York, said that he had had quite a large experience with the removal of sarcomata and carcinomata of the uterus by the vaginal route, and he had found that as a rule any uterus affected with carcinoma or sarcoma which could not be removed by the vagina had so infiltrated the surrounding tissues that the case was unsuitable for operation by any method. His experience had been opposed to the views expressed by Dr. Jacobs that both tubes were usually diseased in cases of extra-uterine pregnancy.

Dr. McGonigal, of California, said that it did not seem to him justifiable to remove the uterus without the presence of pus. Out of seventy-two abdominal hysterectomies he had had no resulting fistulæ.

Dr. William T. Lusk, of New York, said that it would probably soon become the established practice to remove fibroids and carcinomatous uteri of moderate size by the vaginal method. There was no class of cases in which the uterus and the opposite tube were so apt to be healthy as in those of tubal gestation.

Dr. Henrotin said that in nineteen out of twenty cases of extra-uterine gestation the other tube was healthy, and the best method of treating such cases was by the abdominal route. For patching and repairing tubes the vaginal method was not suitable, but it was excellent for drainage.

The Treatment of Puerperal Eclampsia.—Dr. Thaddeus A. Reamy, of Cincinnati, read a paper on this subject in which he detailed several typical cases illustrating the beneficial action of veratrum viride when freely used. He gave Norwood's tincture of veratrum viride, twenty drops hypodermically, repeating this or giving a somewhat smaller dose as often as seemed necessary to soften and slow the pulse down to sixty or even lower. In one of the cases cited, where the convulsions had been frequent, notwithstanding the free use of chloroform, and where the urine had been decidedly albuminous, he had preferred to administer hypodermically three quarters of a grain of morphine sulphate, as the pulse had been weak, the patient very nervous, and the pupils dilated. This case he considered to have been one of reflex convulsions. In another of the cases it had been necessary to administer ten drops of the tincture of veratrum viride three or four times a day for several days. The great virtue of the veratrum viride was its power of promptly arresting the convulsions, and at the same time exciting profuse diuresis and diaphoresis. It was fully equal to bloodletting in its action on the circulation, and it did not leave the patient in such a weak condition. An adult, if kept in the recumbent posture, might take half a drachm of the tincture of veratrum viride with impunity. If it caused great depression, this could readily be relieved by alcoholic stimulants. It was fortunate that morphine also would counteract any depression, and at the same time exert a powerful influence in controlling the convulsions.

The Prophylaxis and Treatment of Eclampsia.—Dr. Edward P. Davis, of Philadelphia, followed with a paper so entitled. He believed that eclampsia was the result of a complex irritant poison produced by the imperfect action of the kidneys, liver, skin, lungs, and intestines. If the excretory processes were active, general œdema in the latter part of pregnancy was of minor importance. In highly nervous women the toxæmia might give rise to premature labor or to a condition of melancholia. No greater mistake could be made than to administer the bromides to such a patient. The treatment should be directed toward securing increased activity of the excretory organs. In a series of eighty cases in which five hundred and sixty-four examinations of the urine had been made the average percentage of urea had been found to be one and four tenths near the end of pregnancy. It had been his custom to estimate the quantity of urinary solids excreted by determining the percentage of urea. The best way to guard against puerperal eclampsia was by keeping pregnant women under intelligent medical supervision.

Dr. Lusk said that it had been a favorite notion of the late Dr. Fordyce Barker that puerperal eclampsia could be most successfully treated by the administration of veratrum viride. Personally, the speaker had never ventured to give this drug in half-teaspoonful doses. His own treatment had been solely directed to securing the rapid emptying of the uterus, and this plan was now almost universally adopted. This treatment, by removing the source of irritation, checked the convulsions in about ninety per cent. of all cases. The patient should be under the influence of an anæsthetic, but the anæsthesia should not be too prolonged, as this would introduce another source of danger. In multiparæ, deep incisions should be made into the cervix; in primiparæ, the cervix should first be softened by the use of a dilator.

Dr. A. Lapthorn Smith said he had advocated this rapid emptying of the uterus for years, and he felt that it was a plan of treatment that should be promptly resorted to whenever the urine was scanty and highly albuminous. In order to favor free elimination, he placed the patient in a warm place and insisted that she should drink large quantities of water. If she could not be induced to take sufficient water, which was the best of all diuretics, he gave the water by the rectum.

Dr. George J. Engelmann, of St. Louis, said that he had seen patients whose urine was loaded with albumin carried safely to full term by proper medication.

The President said that he was of the opinion that the renal insufficiency in these cases was of more importance than the albuminuria. As water was one of the best of diuretics, it was therefore one of the best prophylactic agents in these cases. He valued veratrum viride as highly in the treatment of puerperal eclampsia as Dr. Reamy did, but he had not heretofore given it in such large doses. He felt sure that he had saved several lives by its use, and, as he had recently learned that it was so rapidly eliminated that large doses could be given without much danger, he intended in the future to push its administration even more boldly should circumstances seem to warrant it.

Dr. Reamy said that it was now generally believed that an attack of puerperal eclampsia was directly due to toxæmia, and that the only protection against such an attack that any pregnant woman had was to be found in the healthy action of the emunctories. To those who advocated the immediate emptying of the uterus in all cases of puerperal eclampsia he would only say that many patients did not have the convulsions until after delivery. Forcible dilatation of the cervix and rapid delivery would seem to be productive of as much irritation as the usual continuance of labor.

The Ultimate Results of Uterine Trachelorrhaphy.—Dr. Willis E. Ford, of Utica, read a paper in which he maintained that a nervous disorder was improved by uterine trachelorrhaphy only by virtue of the beneficial action of the operation on the general health. He had been able to follow a hundred and thirty-six of his patients for a considerable time after the trachelorrhaphy. Sixty of these had not presented any unusual nervous symptoms, and the operation had been done for ill health and pelvic distress. All of these had recovered satisfactorily. The seventy-six other patients had been decidedly neurasthenic, and had deep lacerations and large uteri. Forty-nine of these had been relieved of their nervous symptoms within a year after the operation, but the others had remained obstinately neurasthenic.

Dr. Clement Cleveland, of New York, thought that one frequent cause of failure to relieve reflex nervous disturbance was neglect to remove the cystic degeneration in the anterior lip.

Dr. Engelmann said that, as there was also in the older cases more or less endometritis, thorough treatment implied a previous curetting of the uterus. He had observed many cases in which touching the raw, lacerated surfaces was sufficient to excite vomiting, backache, and other reflex symptoms, and where a thorough operation upon the lacerated cervix had caused an immediate disappearance of these symptoms.

Dr. A. Palmer Dudley, of New York, said that a laceration of the cervix caused chronic passive congestion and exerted secondarily a harmful effect upon the ovaries. He seldom operated at the present time unless the scar was tender.

Dr. Gordon believed that trachelorrhaphy was seldom called for except immediately after confinement.

Dr. George Tucker Harrison, of New York, thought trachelorrhaphy a most important operation, but one that had been greatly abused. The operation was often improperly done, even in properly selected cases, and the result was stenosis, dysmenorrhœa, or endometritis.

Dr. Homans said that he had been accustomed to operate for slight lacerations of the cervix, because he felt that even these exerted a deleterious effect on digestion and general nutrition.

Dr. Ford desired to call particular attention to the fact that neurasthenic women were not improved by this operation in a larger proportion of cases than where general treatment was adopted.

A Few Cases of True Pelvic Cellulitis; a Plea for More Thorough Pelvic Surgery.—Dr. Ely Van de Warker, of Syracuse, N. Y., read a paper with this title. He said that not many years ago the term "pelvic cellulitis" had been denied a place as indicating a condition or disease, the pelvic surgeon of that day seeming to ignore the possibility of any wider area of pelvic inflammation than that which attacked the peritonæum, the tubes, or the ovaries. More recently some of the more progressive surgeons had accused the uterus of being the cause of their failures to effect a cure. Personally, he believed that the failure to cure by the primary operation was due to an associated pelvic cullulitis, and not to the fact that the uterus had been left intact. The uterus should be removed, not because it was diseased, but because when it was removed by vaginal hysterectomy, using clamps and not ligatures, the cellular pelvic spaces were opened up, and the necessary drainage was secured. With the finger in the rectum and the thumb in the vagina, the thickened and infiltrated cellular spaces could be felt as indurated, doughy masses. When the lateral cellular spaces were involved, the infiltrations extended downward farther than those situated in the recto-vaginal wall, reaching sometimes nearly to the vestibule. This true cellulitis indicated a concurrent cellulitis higher in the pelvic space, but not necessarily associated with pelvic peritonitis, salpingitis, or oophoritis. This vaginal cellulitis had already been described, but he believed that he had been the first to call attention to it as an index of the character of the primary pelvic inflammation.

Dr. A. Lapthorn Smith agreed with the reader of the paper as to the existence of pelvic cellulitis, but he thought it was much less frequent than pelvic peritonitis.

Dr. J. Whitridge Williams, of Baltimore, said that no one who had seen many autopsies of women who had died during the puerperium could fail to have observed cases of true pelvic cellulitis.

Dr. Etheridge said that in parametritis vaginal examination would reveal a smooth and unbroken surface, while in cases of inflammation within the peritoneal cavity there was always a sulcus between the wall of the pelvis and the peritoneal inflammation.

Dr. Van de Warker, said that in pelvic cellulitis the cellular space between the posterior vaginal fornix and the rectum or the lateral space between the vagina and the pelvic wall would become filled with an exudate the detection of which by palpation constituted the diagnostic point to which he had alluded in his paper.

The Prevention of Uterine Disease due to Childbearing.—Dr. Wylie, in a paper with this title, advocated a more frequent resort to the induction of labor to prevent certain accidents; the use of hourly antiseptic irrigations of the uterus for puerperal sepsis; and the employment of local treatment shortly after confinement as an important means of preventing uterine disease. For the induction of labor he preferred the old method of inserting a soft gum catheter and leaving it in over night. The injection of glycerin had caused such unpleasant sensations that he had given it up.

Dr. Dudley said that it would be dangerous to promulgate the doctrine that the induction of labor should be so often and so lightly resorted to. He believed that the most important means of preventing uterine disease after childbearing was the prompt repair of all injuries occurring during labor.

Dr. Wilson, of Baltimore, said that he constantly resorted to the use of the finger after delivery as a means of exploring the uterus and, if necessary, of curetting it. It was better to leave the canal open than to pack it with gauze.

Dr. Lusk said that in the earlier stages of puerperal sepsis a barrier of leucocytes was formed, and if the physician would only refrain from curetting and meddling with Nature's work, he would have the satisfaction of seeing almost every patient recover.

Dr. Williams said that he had frequently expressed a similar view, but it had not been well received by the profession in Baltimore.

Dr. Wylie said that it was useless to wash out the uterus only once in two hours, and to do it once in three hours was worse than useless. The first douching was often followed by a chill and a rise of temperature, indicating that the tissues had been disturbed and the infection spread, but if the douches were repeated hourly, improvement would soon be manifest.

Deciduoma Malignum.—Dr. WILLIAMS reported a case of this very rare growth, and described the results of the microscopical examination. He was of the opinion that this growth, instead of being derived from the decidual cells, as had been supposed, was in reality formed from the outer layer of the chorionic villi, which in turn were derived from the transformed cells of the lining of the uterus. There were twenty-seven undoubted cases of this disease on record. They usually occurred after a full-term labor, an abortion, or a hydatidiform mole, more particularly after the last-named condition, and in comparatively young women. Where hæmorrhage persisted after any of these conditions, it should arouse suspicions and lead to a microscopical examination. The cases were quite malignant, death usually occurring within six months.

Symphysiotomy.—Dr. LUSK then described with the aid of charts and plates some of the most recent additions to the technique of pubic symphysiotomy.

Book Notices.

A Text-book of Chemistry. Intended for the Use of Pharmaceutical and Medical Students. By SAMUEL P. SADTLER, Ph. D., F. C. S., Professor of Chemistry in the Philadelphia College of Pharmacy, etc., and HENRY TRIMBLE, Ph. M., Professor of Analytical Chemistry in the Philadelphia College of Pharmacy. Philadelphia: J. B. Lippincott Company, 1895. Pp. 2 to 950. [Price, $5.]

To say that this work attains its object is aptly descriptive, and moreover in the highest degree laudatory when we read what that object is—"to offer a text-book on chemistry which should combine scientific accuracy and completeness with that special reference to the needs of the pharmaceutical and medical student, as well as those in active professional practice, which will make it of value for both study and reference."

The volume is divided into several parts. Part I deals of elementary physics, and is unusual, not from any other than the ordinary contents, but from excellence and clearness of handling. Part II presents the chemistry of the "nonmetals" and Part III that of the metals. Both these are remarkable for the unredundant sufficiency of their contents and the pointed, clear, and forcible presentation of the subjects. Part IV deals with organic chemistry, and the usual confusion which attends this study is singularly absent, while in its place we find well-ordered simplicity. Brevity in the study of organic chemistry is, unfortunately, impossible, but far too many writers fail to see, or at any rate to observe, in their effort at completeness, that its value is lost if purchased at the price of disorder. Analytical chemistry and pharmaceutical assaying are presented in Part V, and the matter included is of the greatest practical value. An appendix contains tables of atomic weights, thermometric equivalents, and specific gravities.

The character of the whole book is one of simplicity, brevity, and order, and yet there is no incompleteness. It is the possession of these qualities which will make the book so valuable to the physician as well as to the student, and, if we may so describe it, make the reading refreshing by contrast. The illustrations are good and the bookmaking needs no higher praise than the remark that it is in keeping with the text.

Datos para la Materia Médica Mexicana. Primera Parte. Mexico: Oficina Tip. de la Secretaria de Fomento, 1894. [Instituto Medico Nacional.] Pp. 5 to 515.

THE volume is a collection of treatises by various authors upon the vegetable drugs of Mexico. Of special interest among them are those on aloes, on lobelia, and on valerian. Each chapter furnishes historical, botanical, chemical, physiological, and therapeutical information. Though much that it contains is to us of little interest or importance, yet as a contribution to botanical and therapeutical literature the work will prove of considerable value. More interesting to us than all is an appendix which contains valuable information upon the mineral waters of Mexico.

BOOKS, ETC., RECEIVED.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D., New York City. In Twenty Volumes. Volume III. Occupation Diseases, Drug Habits, and Poisons. New York: William Wood & Co., 1895. Pp. vi–3 to 639.

Lehrbuch der speciellen pathologischen Anatomie. Von Dr. Ernst Ziegler, Professor der pathologischen Anatomie und der allgemeinen Pathologie an der Universität Freiburg in Baden. Achte verbesserte und theilweise neu bearbeitete Auflage. Mit 562 theils schwarzen, theils farbigen Abbildungen. Jena: Gustav Fischer, 1895. Pp. xii–3 to 1025.

Report for the Year 1894 to 1895, presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

A Summary of the Vital Statistics of the New England States for the Year 1892. Being a Concise Statement of the Marriages, Divorces, Births, and Deaths in the Six New England States.

Proceedings and Addresses at a Sanitary Convention held at Charlotte, Michigan, November 22 and 23, 1894.

The Medical Profession and the State. The Alumni Oration. By Hon. Mariott Brosius, Lancaster, Pa. [Reprinted from the *Medical Bulletin.*]

Burns of the Cornea; Electric Light Explosion causing Temporary Blindness; Traumatic Injuries to Eyes; Hypopyon. By L. Webster Fox, M. D. [Reprinted from the *Medical Bulletin.*]

Rabies—Hydrophobia. By Theodore R. MacClure, Lansing, Mich. [Reprinted from the *Proceedings of the Sanitary Convention at Charlotte, Mich.*]

Careless and Unscientific Midwifery, with Special Reference to Some Features of the Work of Midwives. By W. S. Smith, M. D., Baltimore. [Reprinted from the *Maryland Medical Journal.*]

The Flechsig Method in the Treatment of Insane Epileptics. By L. Pierce Clark, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

A Report of Two Interesting Cases. Word-blindness; Localized Muscular Spasms illustrating Cerebral Localization. By J. M. Keniston, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

A Case of Hæmatidrosis combined with Chromidrosis. By Isidore Dyer, M. D., New Orleans. [Reprinted from the *Medical News.*]

The Use of Vaccine Serum in the Treatment of Variola. By Llewllyn Eliot, M. D., Washington, D. C. [Reprinted from the *Medical News.*]

Diphtheria. Its Bacterial Diagnosis and Treatment with the Antitoxine. By Henry W. Bettmann, M. D., Cincinnati. [Reprinted from the *Medical News.*]

The Royal Victoria Hospital, Montreal. First Annual Report for the Year ending December 31, 1894.

Evisceration of the Eyeball. By L. Webster Fox, M. D., Philadelphia. [Reprinted from the *Medical Bulletin.*]

Reports on the Progress of Medicine.

SURGERY.

By JAMES P. TUTTLE, M. D.,
ADJUNCT PROFESSOR OF SURGERY, NEW YORK POLYCLINIC.

Surgical Treatment of Ulcers of the Stomach.—The indications for operative interference in ulcers of the stomach have heretofore been considered to be perforation and obstruction of the pylorus, but recently it has been practised for severe and frequent hæmorrhage. Dr. Küster (*Verhand. d. deutsch. Gesell. f. Chir.*, xxiii, 1894) has reported the interesting case of a young woman who suffered from vomiting and pain after lifting a heavy weight. Dilatation of the stomach and a floating kidney were recognized, and the kidney sutured in position, but without relief of the gastric disturbances. Later, frequent and severe gastric hæmorrhages threatened the patient's life, and operative interference was determined. The dilated stomach was opened, and a deep excavating ulcer was found upon the posterior wall near the pyloric orifice. At the bottom of the ulcer a cherry pit was found, but its influence in producing the ulcer or hæmorrhages was not apparent. The ulcer was cauterized with the actual cautery and the bleeding thus controlled. The operator, failing upon search to find the pyloric orifice, performed a gastro-enterostomy, uniting the stomach to the jejunum. No hæmorrhages occurred after the operation, and at the end of two years the patient was perfectly well and able to eat any sort of food. One other instance in which the operation of gastrotomy was done for hæmorrhage has been reported—a fatal case by Mikulicz. The marked success of Küster's case, however, and the recent successes in operations for perforating gastric ulcer, lead us to believe that in severe cases the procedure will hereafter be recognized not only as justifiable but imperative.

In the recent numbers of current medical journals there have been reported two cases of ulcerative perforation of the intestine and nine of the stomach in which the operative treatment has been successful. The plan followed in these cases has been to leave the ulcer and wall of the organ intact, to fold in the walls of the organs until the peritoneal coverings outside of the ulcerative area are brought together, and stitch them then by silk Lembert sutures. Some have used carbolic solutions and others sterilized water in making the peritoneal toilet, with equally good effects; but all have thought it necessary to use drainage of some kind—that produced by a small opening below the umbilicus, through which a glass tube is carried into Douglas's *cul-de sac*, seems to have been the most perfect. What is more interesting, however, than the immediate recovery of patients from the operation in these cases is the fact that the ulceration itself seems to heal. With two exceptions in the above series of cases, they all seem to have entirely recovered. If the openings were sewn up simply to be perforated again, there would be little encouragement to either doctor or patient, but, with the promise of complete recovery which the above experiences give, the outlook is indeed bright for such desperate cases. Of course, there will be fatalities in operations for perforation, but all will be fatal unless operated on, and great care should be exercised lest a second perforation should exist, as was found upon post-mortem examination in Dr. Kamerer's case (*Medical Record*, i, p. 139, 1895).

Cystic Bronchocele.—Mr. Henry Morris (*Lancet*, vol. i, 1895, p. 28) has made a valuable contribution to the surgery of the thyreoid gland in demonstrating the feasibility of enucleating cystic formations in this organ and leaving the glandular structure unimpaired. The importance of this procedure is apparent, when both lobes of the thyreoid are involved, in view of the tendency to myxœdema which follows complete extirpation of the gland. In one patient he removed by enucleation thirteen cysts, varying in size from that of an almond to that of a pea, from one lobe of the thyreoid, and at a subsequent operation six cysts were removed from the opposite lobe. In another case he removed a single large cyst from the thyreoid. In both cases the gland was left intact. He calls particular attention to the necessity of cutting down thoroughly upon the wall of the cyst before attempting enucleation, as by doing this the hæmorrhage is greatly lessened. The advantages of this method over those of injection and incision, with drainage, are well exemplified in the cases reported. There is much less hæmorrhage, the dangers of sepsis are minimized, the result is more prompt, as immediate union may be anticipated, and there is not the probability of leaving part of the disease untouched, as in drainage and injection.

Gastric Disturbances due to Adhesions treated Successfully by Laparotomy.—In a late communication to the faculty of Paris (*Progrès médical*, November, 1894) M. Terrier and M. Lucas-Championnière presented some interesting cases of intractable gastric disturbances treated by laparotomy and breaking up the adhesions between this viscus and the other abdominal organs. The symptoms indicating such adhesions were dilatation of the stomach, previous history of gastric, hepatic, or intestinal disease, and gastric pain aggravated by eating. Laparotomy was performed by M. Terrier in one case, and adhesions found between the stomach, liver, colon, and diaphragm, and broken down. An indurated point was found in one case at the cardiac end of the stomach, which M. Terrier believed to be inflammatory and not neoplastic. The results of the operations were cessation of pain, return of good digestion, and commencement of increase in weight. M. Lucas-Championnière has practised the operation with success for four years and believes the adhesions to be the result of abscess of the liver or colon. The procedure promises relief to a certain class of cases in which all other methods have failed.

In connection with this it is worth while to notice the remarks of H. W. H. Bennett in a clinical lecture at St. George's Hospital, London, and reported by Dr. McEvoy (*Le Concours méd.*, No. 46, 1894, p. 546), on The Abdominal Pain of Latent Hernia and the Surgical Treatment of Certain Cases of So-called Indigestion. He reviews seven cases of recurrent abdominal pain which had been diagnosticated as indigestion and appendicitis. Close examination showed six of them to have been due to small omental hernias, four in the alba linea and two inguinal. The seventh was due to an undescended testicle.

The cases had all been treated during several years for indigestion, but without relief. The removal of the incarcerated omental nodule and obliteration of the sac was successful in curing all of them. The importance of manual and ocular examination of the abdomen in these cases of painful dyspepsia is forcibly brought out.

New Operations for Carcinoma of the Breast.—Dr. W. S. Halsted (*Annals of Surgery*, November 2, 1894) and Dr. Willy Meyer (*Medical Record*, December 15, 1894) have each suggested a radical method for operation upon carcinoma of the breast, which, while differing in details, accomplish practically the same results. The principle upon which the operation rests is to "lift all the tissue that may be diseased, and often will be found on microscopical examination to be diseased throughout, out of its bed in one piece." The principal points in which these operations differ from those generally in vogue are, first, the more or less radical extirpation of the pectoral muscles; and, second, the removal of the whole mammary and axillary mass in one piece. The operations differ in the initial incision and in the amount of the pectoral muscle removed. Dr. Meyer advocates the complete extirpation of both the minor and major muscles from origin to insertion, beginning at the latter point upon the humerus and working downward through the axilla, thus making the removal of the breast the last step in the operation, and at the same time literally cutting off all channels through which the cancerous cells could be squeezed into the tissues above by handling of the breast. Dr. Halsted's operation is somewhat less radical, but the results he has obtained are by far the most brilliant that have ever been reported in the treatment of this dread disease. He begins by a reversed figure of six incision through the skin and fat, the loop surrounding the breast, the arm extending well through the axilla. The costal attachments of the pectoralis major are then dissected off and the muscle split through opposite the scalenus tubercle of the clavicle; an incision is then made through the skin and clavicular attachment of the pectoralis major, and the split carried outward to a point near the insertion upon the humerus, at which point the muscle is cut off. The axillary fat and glands are dissected out with the mass, the pectoralis minor is cut through about its middle, the upper half reflected, and the lower half, together with the fat and cellular tissue beneath it, removed with the rest of the axillary contents; the dissection is then carried downward till the mammary gland and all the tissues before dissected out are removed from the outer border of the chest in one piece. The lower circular portion of the wound is drawn together by a purse-string suture and the triangular flap is left to cover the axillary space. No sutures are put into it, the dressings being depended upon to hold it in position, and the axilla is never drained. Strange as it may appear, very little disability of the arm follows this extensive operation, and what there is seems to be due to contracture of the cicatrix.

In the fifty cases operated on by Dr. Halsted since 1889, there have been only three local recurrences. Of regionary recurrences—*i. e.*, "skin metastases at a greater or less distance from the scar"—there have been eight, three of which have had the recurrences removed and appear to be perfectly well, and one has inoperable cancer of the femur.

Five of the fifty patients may, then, be said to have had irremediable return of the disease, and forty-five remain well or have died from other causes than local or regionary recurrence of the disease. The brilliancy of these results can only be appreciated through a comparison with those obtained by other operators. The following figures are given as the percentages of local or regionary recurrence in the cases of the operators named—viz., Bergmann, fifty to sixty per cent.; Billroth, eighty-five per cent.; Czerny, sixty-two per cent.; Fischer, seventy-five per cent.; Küster, sixty per cent.; Lücke, sixty-six per cent.; Volkmann, fifty-nine per cent. It is true that most of these operations were done before the systematic cleaning out of the axilla was practised, but nevertheless, compared with the ten per cent. recurrences in Dr. Halsted's cases, they make his results all the more remarkable and give a gleam of hope to these pitiable patients. The importance of cleaning out the supraclavicular as well as the infraclavicular space is emphasized by the fact that the glands of this space were involved in ten per cent. of the cases reported.

Miscellany.

The Herpetic Form of Diphtheritic Angina.—At a recent meeting of the *Académie de médecine*, a report of which is published in the *Presse médicale* for July 6th, M. Dieulafoy related the histories of five cases, the first of which came under the observation of M. Kelsch, who found the diphtheritic bacillus in a case of angina presenting all the characteristics of a common herpetic angina. The second case was one of M. Huchard's; it broke out very suddenly with intense symptoms, and was accompanied by herpes of the pharynx and of the lips. M. Huchard made a diagnosis of herpetic angina, which was confirmed by M. Brocq. At the end of a few days the child died from the disease, which proved to be malignant diphtheria.

M. Roche related the case of a young woman who suffered with an acute angina accompanied by a confluent eruption of herpetic vesicles, the diphtheritic nature of which was proved on the following day. The cultures contained diphtheritic bacilli associated with streptococci. The angina was followed by a scarlatinous eruption, which developed like that of classical scarlatina. This, said M. Dieulafoy, was rather a curious case, as it was well known how rare diphtheritic angina was at the onset of scarlatina. M. Martin had observed two cases, the first in a child five years of age, who presented an angina with herpetic vesicles; on the tonsils there was a false membrane, which proved to be of a diphtheritic nature. The second case was that of a child, six years old, who presented an acute angina with a temperature of 104° F. The tonsils were enlarged and covered with a light pultaceous layer, and the lips showed a group of herpetic vesicles which contained long diphtheritic bacilli.

There seemed therefore, said M. Dieulafoy, no doubt in regard to this question, and he thought that in the future we must consider it an assured fact that a number of the so-called herpetic anginas were diphtheritic in their nature.

According to M. Roux and M. Yersin, out of fifty-two cases of membranous angina of diphtheritic appearance, nineteen were not diphtheritic. M. Morel had proved that out of eighty-six cases of angina of diphtheritic appearance, twenty-five had the appearance only of diphtheria. In M. Martin's work it would be seen, said M. Dieulafoy, that in a hundred and twelve cases of reputed diphtheritic angina thirty-six had not been diphtheritic. Baginsky, in 1894, had published an account of ninety-three cases of diphtheritic angina, in twenty-five of which Loeffler's bacillus had not been found. In 1892 the same author had observed a hundred and fifty-four cases of angina of diphtheritic appearance, but a bacteriological examination had proved that in thirty-six cases a wrong diagnosis had been made. On ther othe hand, said M. Dieulafoy, Parck had observed a hundred and fifty-nine cases of angina eighty-nine of which had not been diphtheritic in their nature. Finally, Koplik had observed thirty-three cases of diphtheritic angina in sixteen of which Loeffler's bacillus had not been found.

Still more numerous, said M. Dieulafoy, were the errors made in cases of so-called secondary angina supervening at the end of eruptive fevers, etc. Many errors consisted in mistaking diphtheritic angina for those anginas in which a certain number of microbes, the small cocci of Brisou, streptococci, staphylococci, pneumococci, etc., gave all the clinical appearances of diphtheria. Another variety of error consisted in mistaking simple, erythematous, lacunar, pultaceous, and herpetic anginas for those that were manifestly diphtheritic. It would easily be seen from the foregoing observations, said M. Dieulafoy, that certain anginas having the most benign appearance might be of a very grave form and even fatal. M. Dieulafoy thought, therefore, that there should not be any hesitation with regard to angina, in saying that the clinical observation gave rise to hypotheses, but bacteriology alone furnished certainty.

Local Anæsthesia by Infiltration.—Dr. O. Bloch, of Albury, contributes an article on this subject to the *Australasian Medical Gazette* for June 15th, in which he says that the dangers and the respective merits of the various methods of general narcosis have been the subject of a great deal of discussion, the practical results of which are not so satisfactory as might be expected from the amount of scientific labor spent over the question, although, he says, they have achieved one good result in reminding medical men of the sense of danger, and therefore of the responsibility, attached to the administration of any general anæsthetic. Dr. Bloch states expressly that he does not for a moment mean to denounce a careful and judicious use of general anæsthetics. To them, he says, is due the wonderful progress of surgery and, considered from a broad point of view, they will do a great deal more good to humanity than harm can be done through them to the individual. But it should be impressed on the mind of the surgeon that in general narcosis he has an undoubtedly dangerous helpmate. The more surgery advances, he says, the more numerous the cases of narcosis will become, and the higher will be the absolute death-rate, even if we should find means and ways to lessen the dangers of the individual narcosis by a choice of drug or method. But it is not at all likely that we should ever be able to overcome its danger, for the simple reason that we can not paralyze the central organ of sensation without influencing the rest of the central organs of vitality, and, while the first may be suspended without danger to life for a long time, respiration and circulation will not stand suspension for any length of time. Therefore, it is very urgently incumbent on modern surgery to find out or follow up such substitutes for general narcosis as, while fulfilling the humane postulate of anæsthesia, will not endanger the health and life of the person for whose benefit they were intended, and any reasonable attempt to do away with a considerable percentage of the more dangerous general narcosis ought to command the sympathy of every surgeon. This, he says, is the reason which induced him to introduce the new method of local anæsthesia invented by Dr. C. L. Schleich, of Berlin, which was exhibited by him during the Congress of German Surgeons at Berlin in 1894. The author himself has had the opportunity of testing this method in over a dozen cases.

The new method, which may be called the infiltration method, says Dr. Bloch, is based on a perfectly new principle, or rather on two. It establishes a local œdema in whatever tissue and at whatever depth the knife may have to work in. It uses, as a vehicle to bring about this œdema, a fluid which, while not destroying protoplasm life and not injurious to the general health, deadens, for the time being, the sensitiveness of the area of infiltration and interrupts the nerve conduction within it. This vehicle is a 0·2-per-cent. solution of ordinary table salt, to which is added a minimum of narcotics, such as cocaine, morphine, or codeine, in a concentration far below the dangerous dose, even though large quantities of the fluid should be injected. If a certain area of any tissue, says the author, is thoroughly infiltrated by a 0·2-per-cent. salt solution it becomes anæsthetic, in consequence partly of the specific action of the solution on the nerve tissue, partly in consequence of the combined effects of the ischæmia, compression, and local decrease of temperature produced in the œdematous area. The cooler the injected fluid is, the more effective it is. Schleich uses three solutions, in which the 0·2-per-cent. chloride-of-sodium solution is combined with cocaine and morphine (or codeine) in various degrees of strength; the slight addition of carbolic acid is made to keep them aseptic.

				In English Measure.		
Solution.	I.	II.	III.	I.	II.	III.
Cocaine hydrochloride,	0·2 grm.	0·1	0·01	4 grs.	2	1/5
Morphine hydrochloride,	0·025	0·025	0·005	½ "	½	1/10
Sodium chloride,	0·2	0·2	0·2	4 "	4	4
Sterilized distilled water,	100 grm.			4 fl. oz.		

Add three drops of a five-per-cent. solution of carbolic acid.

The table salt ought to be heated and the distilled water boiled before making up the solution, to insure asepsis; the cocaine and morphine are naturally germ-free.

The solution No. 2 is one generally used; No. 1 may be used in much inflamed tissues. No. 3 is very often sufficient and especially useful in protracted operations, when, by using No. 2, the maximum dose of the narcotics would be approached. It will be seen that about two ounces, or fifty Pravaz syringes of twenty minims each of No. 2, or twenty ounces, equal to five hundred syringes of No. 3, can be injected before the maximum dose of cocaine (or morphine) is reached, and practically even double the quantity would still be without danger, as we will learn, from a more detailed description of the technique, that the whole amount is not injected at once, but in minute quantities at a time, and at least half or two thirds of the injected fluid is washed away by the blood or oozes out from the wounds without being absorbed into the system.

Every operation, says the author, has to begin with the establishment of an œdematous spot within the layers of healthy skin in the vicinity of the place to be operated upon. The needle of a Pravaz-syringe is filled with one of the solutions and inserted into, not underneath, the skin, superficially and as much as possible parallel to the surface, just far enough to cover the slit. By gentle pressure sufficient fluid is driven out to cause a white œdematous spot, a sort of wheal, to arise. Within this spot the tissue is perfectly anæsthetic. By inserting the needle again into the first wheal a second wheal is established, and so on. This is illustrated by a cut showing a semicircular line of wheals which outline the extent and shape of the incision to be made. Only the first insertion of the needle, says Dr. Bloch, is accompanied with the slight pain of a prick, which may startle very nervous patients and children; but even this can be prevented by using the ether spray on the spot of the first injection (which, it must be kept in mind, has always to be done in healthy skin) or, on mucous membranes, by touching it with concentrated carbolic acid or a small crystal of cocaine. All the following insertions of the needle are perfectly painless, being made within the area of previously established anæsthesia. Along this line of wheals the skin is incised right into the subcutaneous tissue. If it is necessary to go further than skin deep, the subcutaneous tissue is infiltrated in exactly the same way, always taking care that every subsequent injection is made within the area of already infiltrated tissue. Bleeding points can be secured in the usual way; in the case of larger vessels it may be necessary, after gently pressing them between the branches of the artery forceps, to infiltrate the sheath of the vessel before ligating it, or to touch it with a drop of concentrated carbolic acid, which will be found sufficient to deaden the sensibility of the fine nerves running inside the coatings of the blood-vessels. Every tissue, says the author, whatever its nature may be, may be infiltrated and rendered anæsthetic; it can be done easily and with little waste of solution in the soft tissues (subcutaneous, muscular, fatty), with greater difficulty and under considerable pressure in sclerotic ones. Even bone can be rendered perfectly anæsthetic by the infiltration of the periosteum, and amputations of the fingers, amputations of the forearm, and resections of the wrist have been painlessly performed by circular infiltration of the respective bones. If the stratum within which the operation has to be performed is not too deep, the infiltration can be carried on to it by simply pushing the needle, under continuous expression of fluid, deeper and deeper; or we can infiltrate layer after layer, keeping the margins of the superficial ones apart by sharp or blunt hooks, in the usual way, as we proceed. The time during which the anæsthesia will last may safely be supposed to be from twenty to twenty-five minutes, sufficient for operating in one layer of tissue, but nothing prevents any layer from being reinjected as often as can be done without transgressing the maximum dose of the nervine. The stitching of a wound may be done painlessly in the original line of superficial wheals, or new wheals may be established for the purpose. It may be remarked that infiltration in itself (by compressing the capillaries) prevents a good deal of bleeding; that larger vessels can be easily ligated as described above; that the infiltrated tissues, far from becoming indistinct, are very plainly defined against each other, so as to afford a good anatomical view and allow neat preparatory work.

While the foregoing remarks may give a general idea of the infiltration method, says Dr. Bloch, there are, of course, many little points to be observed which have to be learned by practice, and every operation, according to the nature of the ailment and the tissue to be worked upon, presents new features of technique. He, however, states from his own experience that there is little difficulty to suit the way of proceeding to the nature of the case.

With regard to the enucleation of a superficial tumor, a lipoma, or an atheroma, says the author, a curved needle is advisable. A superficial line of wheals is established across the greatest diameter of the tumor, taking care, if it rises considerably over the surface of the skin, to draw it to one side while injecting, in order to minimize the steepness of the ascent from the surface of the skin to the tumor. An incision is then made along the line of wheals and the solution injected into the subcutaneous tissue between the skin and the capsule of the tumor, first on one side, then on the other. By using a curved needle the cellular tissue can be infiltrated to such an extent that an atheroma may be fairly pushed out through the incision, and quite easily detached from its bed. If the tumor is very large, the operation may require very large quantities of anæsthetic fluid and very long needles, and it may not always be possible to finish the operation without resorting to general narcosis.

For the radical operation for hydrocele this method can be readily employed, and for the opening of any cavity of the body the same general technique holds good. For hæmorrhoids, says the author, this method has proved to be of the greatest value. Schleich cites twenty-five cases in which he successfully employed this method; the patients were cured in from six to ten days. Analogous to this operation, says Dr. Bloch, are those inside the vagina, and in operations on hydatids and the gall bladder this method will prove particularly useful. In regard to abscesses, under no circumstances must any fluid be injected into them before at least some of the contents is previously allowed to escape, as the increase of inside pressure is extremely painful, and the first injection must be made into healthy skin at some distance from the abscess. After infiltrating the skin covering the abscess (with solution No. 1 if there is much inflammation) a very small incision ought to be made, part of the contents let out, and the pyogenic membrane infiltrated before extending the incision. By injecting the walls of the abscess it can be scraped out painlessly. It does not matter in the least how deep the abscess is situated, for it can be reached by slowly progressing from layer to layer. Dr. Bloch states that he has opened an abscess of the thigh containing about a pint and a half of pus, originating from the periosteum, which he was able to reach only by working through the big adductor muscles to the depth of four inches and ligating several arteries. During the operation the patient never flinched.

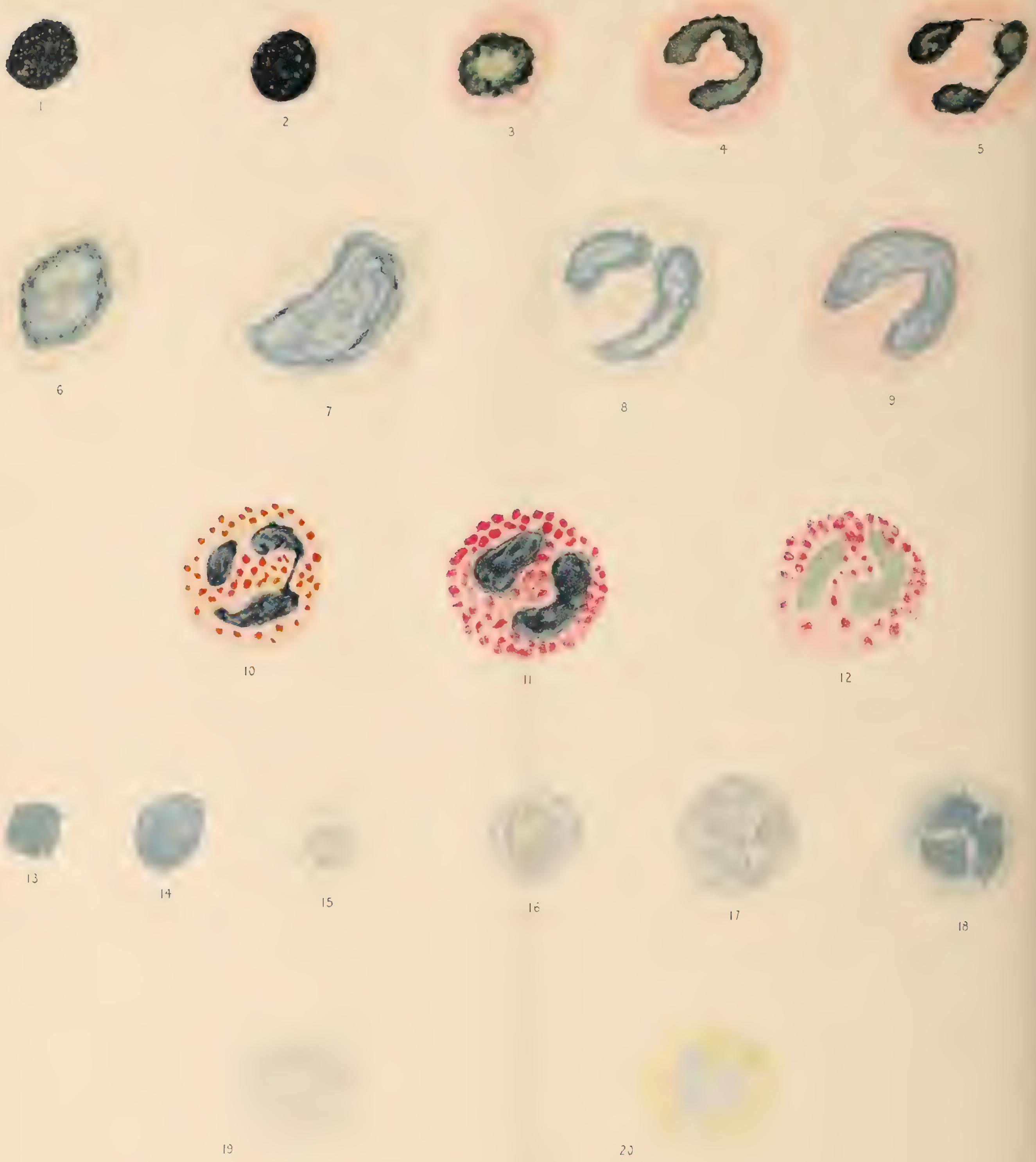
Panaritium, says the author, requires a very subtle technique under the new method. Boils may be incised by using a simple skin-infiltration with solution No. 1, or the inflamed tissue may be approached from four sides and, by lowering the needle, undermined by a perfect bed of infiltration, after which the boils can be cut out.

Dr. Bloch says that a great number of other operations have been performed under this method of local anæsthesia, amounting altogether to over three thousand. He also says that the inventor of this method does not allege that it takes the place of general narcosis. On the contrary, there are cases where it is insufficient, or the nature and the local conditions of the ailment do not admit of its employment.

It would be a great gain, he thinks, if most of the minor operations could be performed without exposing the patient to the dangers or, at least, to the inconveniences of general narcosis.

A Sedative to be Used in the Treatment of the Insane.—In the *Lyon médical* for July 14th there is an abstract of an article from a *Traité de la folie*, in which the writer says that M. J. Luys, being struck with the special and elective action of potassium bromide on the bulbar region, the excito-motor activity of which is diminished by it, also with the particularly elective action of opiates and of chloral on the cerebral lobes, conceived the idea of associating these medicinal agents, and formulated the following mixture, which he has employed daily in his hospital practice, as well as in his private practice, with good results: Distilled water, 3½ ounces; syrup of morphine, 450 grains; potassium bromide, 60 grains; chloral hydrate, 30 grains. A tablespoonful of this mixture is to be taken every two hours. If the patients are violent, the entire quantity may be given during the day and again in the night. A very marked sedation is obtained at the end of twenty-four hours.

A Gold Medal for Dr. Roux.—The *Union médicale* for July 6th says that it will be remembered that the municipal and general councils decided last year that a gold medal should be awarded to M. Roux for his great scientific work. Two medals were struck off, one in the name of the Department of the Seine and the other in the name of the city of Paris. These medals were presented to M. Roux on Tuesday, July 2d. M. Roux tendered his thanks to the departments which were represented by the municipal and general councils, and, with his usual modesty, said that he had not made any great discoveries; he had simply worked under M. Pasteur's inspiration and had only developed what others had observed before him. All that entitled him, he said, to the recognition with which he had been honored was that he had been able to extend the benefits of the serum therapy to the little children of Paris.



DR. EWING'S ARTICLE ON LEUCOCYTES OF DIPHTHERIA.

1–12, Dry preparations. Eosin and hæmatoxylon. $\frac{1}{12}$ immersion lens.
13–20, Leucocytes as seen in salt solution tinged with gentian-violet.
1–5, Mononuclear and polynuclear leucocytes, with compact, deeply staining nuclei.
6–9, Stages of large mononuclear leucocytes.
10, Pseudo-eosinophile granules.
11, 12, Eosinophile cell.
18, Polynuclear, well-stained nuclei.
19, Polynuclear, poorly staining nuclei.
20, Eosinophile cell.

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Original Communications.

THE LEUCOCYTOSIS OF DIPHTHERIA UNDER THE INFLUENCE OF SERUM THERAPY.

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The universal interest now centring upon the serum therapy of diphtheria has served to emphasize the present lack of knowledge of the leucocytosis of this disease. While probably not to be regarded as the ultimate agent in the production of immunity, the leucocyte has been certainly demonstrated as the instrument through which the immunizing principle secures a limitation of infectious processes. It might be anticipated, therefore, that in this malignant infection a careful study of the leucocyte, the organism's chief means of defense, would prove to be of some theoretical interest, or perhaps give valuable aid in following the clinical course of the disease. Especially under the influence of a new therapeutic agent claimed to limit the local process and possibly destroy the circulating poison, a more complete knowledge of the leucocytosis of diphtheria is demanded, in the hope of partially explaining the mode of action of the so-called "antitoxine" and the production of immunity in general.

The literature concerned with the leucocytosis of diphtheria is limited. In 1868, before the application of our present methods to the enumeration of blood-cells, Bouchut observed an "acute leucæmic condition" of the blood in diphtheria, by examining specimens under a cover glass.

In 1877, Bouchut and Dubrisay published ninety-three analyses of the blood of children ill with diphtheria. They noted a progressive febrile anæmia and, with few exceptions, a considerable leucocytosis. Their conclusions as to the presence and significance of this phenomenon in diphtheria not being supported by fourteen observations of Cuffer's, a more extensive study was undertaken, and in 1879 Bouchut reported a larger series of cases, in which the changes in the blood had been followed from day to day. As a result of this work, he concluded that when diphtheria remains a local process, it always terminates favorably and is unattended by leucocytosis; but when the local process is complicated by septicæmia, the disease always terminates fatally and a leucocytosis occurs which is the exact measure of the toxæmia. He apparently ignored, in these conclusions, evidence appearing in his own studies, that in some cases there is a moderate and decreasing leucocytosis accompanying marked and increasing septicæmia and a malignant course.

Pee, as cited by Rieder, found the leucocytosis of diphtheria less pronounced than that of ordinary follicular amygdalitis.

Rieder adds five analyses of his own, in three cases attended with moderate leucocytosis. He regards the examination of the blood as of no value in the diagnosis between diphtheria and benign pharyngitis. Further observation is necessary, he thinks, to support the observation of Bouchut that the leucocytosis of diphtheria increases with the severity of the disease, and that the examination of the blood may therefore be of value in prognosis.

Very recently, Morse published thirty analyses of the blood in as many cases of diphtheria occurring in children and adults at the Boston City Hospital. He found, as did Bouchut, that the leucocytosis of diphtheria increases with the degree of septic intoxication, and concluded that the examination of the blood is of no value in prognosis. In his cases, the leucocytosis corresponded usually, but not always, with the extent of the membrane, and subsided with or soon after its disappearance. The leucocytosis was not affected by glandular involvement, nor by pulmonary or renal complications. From a morphological study of the leucocytes, he found the increase to be due, in the majority of cases, to an excess of multinuclear neutrophile cells; but in several instances all varieties were present in normal proportions, and in some convalescent cases a lymphocytosis was observed without glandular enlargement.

The serum therapy of diphtheria having been most extensively followed in Paris by Roux, observations on the influence of antitoxine upon the leucocytosis of diphtheria were naturally expected from that centre. Accordingly, Gabritschewsky recently reported a study of the leucocytosis of fourteen cases of diphtheria treated by antitoxine. His clinical observations led him to believe that "the leucocytosis of diphtheria follows a peculiar course which distinguishes it from the leucocytosis of many other infectious diseases," such as pneumonia. "Progressive leucocytosis in diphtheria is a bad prognostic sign, and the analysis of the blood may give useful indications concerning the value of treatment." In eleven successful cases and in one fatal case there was a progressive diminution of leucocytes following treatment by antitoxine. In two fatal cases the leucocytosis increased after the use of antitoxine. In a series of experiments conducted upon rabbits, he found the intraocular injection of the diphtheria bacillus to be followed, in the susceptible animal, by absence of local inflammatory reaction, by generalization of the poison, and death; but in the vaccinated animal there was an intense inflammatory reaction, which prevented the entrance of bacteria into the blood, and, through phagocytosis, soon effected a cure.

In sections through the tissues at the site of inoculation, the necrotic action of the bacillus was much more extensive, and phagocytosis less pronounced, in the susceptible than in the vaccinated animal. He believes that the necrotic action of the diphtheritic toxine affects all the cells of the organism and inhibits phagocytic activity, while therapeutic serum renders the cells less sensitive to the action of the toxine.

The literature thus reviewed seems to offer insufficient evidence from which to establish the relation of the leucocytosis to the clinical features of diphtheria. Bouchut alone was able to follow his cases with this end in view for a continued period. Further, the virulent nature of the diphtheritic poison makes this disease a specially favorable field for a morphological study of the leucocyte as affected by a bacterial toxine. Finally, the influence of the antitoxine upon leucocytosis and the morphology of the leucocyte has already been mentioned as deserving much more careful attention than the subject has yet received.

With these ends in view, the writer followed the changes in the blood of fifty-three cases of diphtheria received at the Willard Parker Hospital during the months of February and March, 1895. Access to these cases was secured through the kindness of Professor T. Mitchell Prudden, which the writer here takes pleasure in acknowledging.

The constant courtesy of Dr. Somerset removed much of the difficulty of obtaining specimens of blood from the patients, all of whom were under his immediate charge. The serum used in the hospital was prepared under the direction of Dr. Park and Dr. Fitzpatrick, and that employed in the experiments was kindly furnished by Dr. Ira T. Van Gieson.

Technique and Morphology of Leucocytes.—The specimens of blood were drawn in the usual way from the dried finger-tip through a fine needle puncture.

The Thoma Zeiss erythrocytometer was employed in the examinations, the blood being diluted a hundred times in six-per-cent. salt solution tinged with gentian violet. A very weak solution of this dye is recommended to demonstrate some of the reactions of the leucocytes hereafter described.

One drop of saturated alcoholic solution of gentian violet added to fifty cubic centimetres of salt solution gave the most satisfactory staining fluid for this purpose. Not being able to secure the counting chamber designed by Zaffert, in which is outlined nine times the area of Thoma's instrument, a mechanical stage was used in order to count the number of leucocytes necessary to guarantee accurate results.

By this method forms were enumerated which may be classified and described as follows:

1. Small mononuclear cells, of which the nucleus is usually compact and deeply staining, and the protoplasm limited to a thin, faintly visible ring. By the examination of dry specimens stained with hæmatoxylon and eosin, this class was found to include lymphocytes without visible protoplasm, ordinary uninuclear leucocytes with compact nucleus, transitional forms of uninuclear leucocytes in which the nucleus shows a tendency to become incurved or vesicular, and, finally, a few uninuclear leucocytes in process of direct nuclear division.

2. Large uninuclear leucocytes with vesicular, usually faintly staining, nucleus, and a considerable mass of clear protoplasm having no affinity for gentian violet. Dry preparations showed this class to consist of uninuclear leucocytes with neutrophile protoplasm, and a large round or slightly incurved nucleus, which is not distinctly vesicular, but which presents throughout a thin stratum of chromatin much condensed at its circumference. In the tables, the large and small mononuclear cells, as determined in salt solution, are combined for the sake of brevity.

3. Multinuclear leucocytes of which the nucleus stains distinctly with the above weak solution of gentian violet. Occasionally, in the protoplasm of these cells, a few greenish (eosinophile) granules were observed. In dry preparations the nuclei of these cells were always found compact and deeply stained with hæmatoxylon. The isolated eosinophile granules appeared deep red as usual, and some of these cells contained the pseudo-eosinophile granules mentioned below.

4. The enumeration of this class of cells was based solely upon a much-diminished or entire lack of affinity shown by the nuclei of many multinuclear leucocytes for gentian violet in the above-mentioned diluted solution. In dry preparations the nuclei of these cells appear less compact and stain rather less deeply with hæmatoxylon than the nuclei of multinuclear leucocytes found in normal human blood. Their protoplasm frequently contains granules of varying size which show an increased affinity for eosin, not sufficient to place them among eosinophile cells, but too evident to allow their classification among multinuclear neutrophile cells. Many of the forms enumerated by the writer in this fourth class are doubtless identical with the so-called pseudo-eosinophile cells, or with the amphophile cells of Ehrlich; for, notwithstanding the statement of Cantacuzene (*loc. cit.*, page 46) that pseudo-eosinophile cells do not occur in human blood, treatment by eosin and methyl blue develops the violet color of such granules in every one of the pale leucocytes to be found in severe cases of diphtheria. It was not, however, the presence of these granules, which are invisible in salt solution, but the failure of staining quality in the nucleus, which determined this special classification. In fact, after treatment by eosin and methyl blue, nearly all the multinuclear leucocytes of the severe cases of diphtheria showed an abundance of pseudo-eosinophile granules. This observation accords with those of Cantacuzene, and of Everard, Demoor, and Massart, who found that in guinea-pigs and rabbits nearly all multinuclear leucocytes contain such granules within twenty-four hours after intraperitoneal injection of the cholera vibrio.

The formation of these granules had been shown by Metchnikoff to result from the process of intracellular digestion which occurs during phagocytosis. Examining the peritoneal exudate from vaccinated guinea-pigs after injection of the cholera vibrio, he found that the vibrios englobed by the leucocytes at first assumed a blue color with methyl blue, but soon began to show an affinity for acid dyes. Treated successively by eosin and methyl blue, many of the leucocytes were found to contain, side by side, a vibrio colored blue and another colored red. At a later stage, the bacteria were reduced to granulations so arranged as to reproduce the original form of the vibrio, and colored blue or violet or red, according to the stage of digestion. Finally, as the intracellular digestion was completed, the leucocytes of the peritoneal exudate were gorged with pseudo-eosinophile granules, resulting from the destruction of microbes. While this process in diphtheria may very well result in the formation of pseudo-eosinophile granules in the protoplasm of leucocytes, it is hardly a sufficient explanation of the occurrence of these granules in ninety per cent. of the intravesicular multinuclear leucocytes, nor does it explain the bleaching of the nuclei. To the necrotic action of the circulating toxines must be attributed a considerable influence in the production of these changes in the leucocytes of diphtheria.

5. The true eosinophile cells contain large greenish refractive granules, which can be quite as positively identified in salt solution as by staining processes. The nuclei of these cells usually stain faintly with gentian violet, but occasionally they assume a color as dark as that of ordinary multinuclear leucocytes. Following the principle previously stated, the eosinophile cells with well-stained nuclei were added to the third class, and the same cells with poorly staining nuclei to the fourth.

6. Finally, the proportion of amœboid figures was found to greatly increase with the severity of the disease, and a separate enumeration was made of cells in this condition.

Dry preparations were submitted for three to five minutes to the action of a saturated alcoholic solution of eosin. Gage's hæmatoxylon was used as a nuclear stain, and the specimens were treated with this fluid for five minutes. For the demonstration of pseudo-eosinophile granules, the preparations were stained for five to ten minutes in a strong watery solution of methyl blue, after the usual treatment by eosin.

In the examination of stained preparations the following forms were enumerated:

1. Small lymphocytes with compact, deeply staining nucleus, and with or without a very thin ring of protoplasm.

2. Uninuclear leucocytes of which the nucleus is always deeply stained, in form either compact and spherical, or slightly incurved, or partially vesicular, and of which the protoplasm is abundant and neutrophile.

3. Large uninuclear leucocytes with a large circular or slightly irregular nucleus, staining well with hæmatoxylon at the periphery, less deeply at the centre, and with abundant neutrophile protoplasm.

4. Multinuclear leucocytes of which the nuclei are compact and deeply staining and the protoplasm more or less occupied by pseudo-eosinophile granules.

5. Multinuclear leucocytes of which the nuclei are larger, appearing vesicular in salt solution, staining deeply with hæmatoxylon at the periphery, but faintly at the centre. A sufficient reason for the separate enumeration of these cells was found in the fact that their variations corresponded to changes in the severity of the disease, and that injections of antitoxine were found to affect principally these and the large mononuclear forms.

6. Eosinophile cells, which, on account of their infrequent occurrence and lack of significance in acute infectious diseases, here deserve little attention.

The Variations of Leucocytosis and the Clinical Features of Diphtheria.—From the study of the present cases, it appears that the leucocytosis of diphtheria is considerably affected by many of the clinical features of the disease, but bears no invariable relation to any of them.

In a large majority but not in all of the severe cases a pronounced increase of leucocytes was found at the time of admission to the hospital. In its further course the leucocytosis was most affected probably by the local inflammatory reaction, as judged by the extent of the membrane, the hyperæmia, and the involvement of the cervical lymph nodes. In three cases in which the inflammatory reaction was slight and the membrane very limited in extent, the leucocytosis was very moderate in spite of a high febrile disturbance, and in five others in which there was extensive formation of membrane the leucocytosis was pronounced, but the rise of temperature moderate.

The variations in leucocytosis often corresponded with the course of the fever. This relation, however, held only during the first days of the disease, for after the climax of the systemic reaction there were many variations between the grade of leucocytosis and the height of the fever, some cases recovering with falling temperature but high leucocytosis, others dying with a rising temperature but steady decrease in the numbers of leucocytes.

In eleven cases in which the streptococcus as well as the Klebs-Loeffler bacillus was identified morphologically in the cultures, there was no definite influence referable to the mixed infection. Many of these cases were very severe or fatal.

In ten fatal cases a complicating pneumonia was the cause of death. When the pulmonary lesion was rapidly fatal, this complication caused a rapid increase of leucocytosis, but when the termination was postponed for three or four days, a steady diminution of leucocytes was observed.

The influence of renal complications was not recognized either in the height or in the course of the leucocytosis. A pronounced lymphocytosis was a special feature in two severe cases, unaccompanied by any hyperplasia of the lymph nodes. There was here no evidence that the excessive increase of uninuclear leucocytes had any influence on the numbers of multinuclear cells, which throughout the disease appeared in the usual proportions.

A considerable hyperleucocytosis persisted in two cases long after the complete subsidence of fever and the disappearance of bacilli and local inflammation. This observation may be related to that of Chatenay, who found that the leucocytosis of animals undergoing successful vaccination was very slow in subsiding.

From the dry preparations, it was noted that the numbers of uninuclear leucocytes were subject to periodical variations without apparent relation to clinical features of the disease. The proportions of multinuclear leucocytes usually increased with the severity of the symptoms and diminished during convalescence. In many of the fatal cases the percentage of multinuclear cells progressively declined or had never reached a high figure.

The low proportion of multinuclear cells often observed at an early period may be regarded as a relic of the toxic hypoleucocytosis produced at the onset of the disease. This feature was specially prominent in very severe cases.

In order to correctly interpret the variations of leucocytosis in diphtheria, it is necessary to consider the relations of the local inflammatory process, the degree of septic absorption, and the activity of the blood-producing function. It is necessary also to distinguish between local and intravascular leucocytosis. The latter does not represent the real war of the organism against infection, which can only be seen in sections through the tissues at the point of inoculation and by estimation of the local afflux of phagocytes. Intravascular leucocytosis represents only the activity of the blood-producing function in the attempt to remove from the system those bacterial products which have passed the barrier of leucocytes at the site of infection. It may also indicate to a less degree the number of leucocytes developed in different organs and on their way to the local inflammatory focus.

From the experimental evidence accumulated in this and other local infectious diseases, it is known that the quantity of bacteria and products that reach the circulation at the beginning of an infectious process varies with the amount and virulence of the infection and the susceptibility of the animal. In susceptible animals a localized injection of pathogenic bacteria is followed by a considerable period of negative chemotaxis, during which there is a failure of phagocytosis and the injected material is free to enter the circulation. In refractory and inoculated animals this period of negative chemotaxis lasts a very few minutes or is practically absent, and the injected material is immediately attacked by phagocytes, probably influenced also by the bactericidal action of blood serum, and at once shut off from the circulation. In two animals of equal susceptibility the period of negative chemotaxis is longer in that one which receives the larger and more virulent injection. In very susceptible animals the period of negative chemotaxis may continue until the death of the animal. The inoculation of guinea-pigs with diphtheria is followed by such a course of intoxication. By further application of the same principles it is possible that, even after the initial period of negative chemotaxis has passed and leucocytosis and phagocytosis are well established, the injections may be so varied and increased that negative chemotaxis may be reestablished, the blood-producing function exhausted, and the intravascular and local leucocytosis succeeded by progressive failure of both phenomena.

The death of the animal may, of course, occur at any stage of the process, either before intravascular leucocytosis has occurred, or at its height, or during its progressive failure (Metchnikoff, Pfeiffer, Wasserman, Isaeff, Sanarelli, Cantacuzene, etc.).

Many of the clinical variations of leucocytosis to be observed in diphtheria may be explained according to these experimental data.

A moderate local infection in the insusceptible adult may be unattended by general leucocytosis, as was several times observed in the present series of cases. Children being more susceptible than adults, in them nearly all diphtheritic infections may be expected to produce an appreciable period of negative chemotaxis, allowing considerable absorption of toxines, with a corresponding leucocytosis. Accordingly, only one case of well-marked severity occurring in a child was observed to run its course without distinct leucocytosis.

With an intense local infection it might be anticipated that even in insusceptible adults a moderate quantity of bacterial products would reach the circulation and there excite leucocytosis. In the cases observed in adults, when the local infection was virulent enough to cause the formation of much membrane, there was also pronounced intravascular leucocytosis, corresponding in general to the severity of the local reaction.

With one possible exception, no case was found in which the period of negative chemotaxis continued until a fatal issue; but it seems probable that a more extended observation of malignant epidemics would produce an example of malignant diphtheria unattended by leucocytosis. The human subject being comparatively insusceptible to diphtheria, the period of positive chemotaxis, with high intravascular leucocytosis and intense local reaction, may be expected early in the disease. This is the usual clinical form of the affection in children, and most of the fatalities occur at a period marked by high leucocytosis and active inflammation. In the present series eleven of the fatal cases died during this stage.

It is more difficult to explain the course of the blood changes observed in two children who, after the leucocytosis had reached a considerable height, continued to do badly, one dying from sepsis, the other from pneumonia, while the numbers of intravascular leucocytes steadily decreased. So far as the writer can learn, leucocytoses of such a character have not been previously observed in diphtheria, nor have they been successfully reproduced experimentally. Both of these cases being prolonged examples of the disease and attended with extreme septic absorption, it is possible that the excessive quantity of toxine thrown into the circulation produced a condition of progressive toxic hypoleucocytosis, exhausted the blood-producing function, and even destroyed many leucocytes already present in the blood. Evidences of leucocytolysis were not wanting in the blood drawn before death. In salt solution very few of the leucocytes could be stained, their outlines were very irregular, and amœboid figures were abundant, while in dry preparations there was an unusual number of broken nuclei without adherent protoplasm.

For the continued period of hypoleucocytosis observed in one case, in which the cervical lymph nodes were enormously swollen, and which was fatal on the nineteenth day from pneumonia, no plausible explanation offers itself.

The Analysis of the Blood in the Prognosis of Diphtheria.—In none of the cases was it found possible to attach any prognostic value to a simple enumeration of the leucocytes at any stage of the disease.

Previous writers have agreed that the examination of the blood can give little aid in the prognosis of diphtheria. Since the intravascular leucocytosis measures in general the degree of septic absorption, it may be inferred from a high leucocytosis in diphtheria, as in pneumonia, that the infection is severe, but not that the course of the disease will prove unfavorable. The highest leucocytoses of the present series were noted in two severe cases, both of which ultimately recovered, and, on the other hand, in two fata cases there was no leucocytosis during the first few days of the disease. When, however, the blood changes are followed from day to day, it will be found that progressive increase of leucocytes is usually followed by death. Yet, contrary to the conclusion of Gabritschewsky, in some very septic fatal cases there was a steady decrease of leucocytosis up to the time of death. Some little assistance may be obtained from a study of dry preparations, from which it appears that in the favorable cases the percentage of multinuclear leucocytes is usually high and increasing, while in the fatal cases their proportion is lower and diminishing.

It must be concluded, therefore, that no valuable prognostic signs can be obtained from observations of the leucocytoses of diphtheria thus far considered. When, however, the blood is drawn in salt solution, tinged with gentian violet, and the staining qualities of the leucocytes are considered, a greater value can be at once placed upon the examination. From an analysis of the appended tables it will readily be seen that the numbers and percentages of the poorly staining leucocytes, and usually of amœboid figures, invariably increased with the unfavorable course of the disease, and without relation to the total numbers of leucocytes to be found in the blood. This failure of color reaction can be only imperfectly indicated by numerical estimates of stained and unstained leucocytes, for in severe cases all the multinuclear leucocytes were somewhat affected. Whatever its nature may be, evidence of the prognostic importance of this nuclear change was found in every severe case in which it was considered. In all the grave conditions the proportion of poorly stained leucocytes was large; if the patient improved, the leucocytes recovered their staining capacities; or, if the general condition grew worse, the staining reaction became weaker. Any considerable increase of poorly stained leucocytes, especially if accompanied by a decrease of well-stained cells, invariably heralded a grave or fatal turn in the disease. This evidence of the blood sometimes preceded any noticeable change in the patient, as judged by the usual clinical signs; more often the failing condition was evident at the time of the examination; occasionally the patient appeared to fail or improve a few hours before any change was observed in the leucocytes. In a few rapidly fatal cases in which mechanical stenosis or pneumonia was the immediate cause of death, this change in the leucocytes was less pronounced, but when septic absorption had continued for several days a high proportion of stainless leucocytes was always noted. While subject, then, to the limitations of most isolated clinical symptoms throughout these observations, the staining capacity of the leucocytes took its place among the features of the disease, and proved to give the most valuable prognostic sign obtainable from the examination of the blood.

The Influence of Antitoxine upon the Leucocytosis of Diphtheria.—The injection of antitoxine in nearly every instance produced marked and immediate effects upon the leucocytes. Of eighteen observations made just before and after the injections, in fifteen there was a considerable decrease in the numbers of leucocytes, most marked within twenty-five to forty minutes after the injection. Of the exceptions, two cases were very shortly fatal, and one was an adult, receiving only seven cubic centimetres of the serum. The duration of this period of hypoleucocytosis could not well be determined in patients profoundly ill, but in normal rabbits receiving an equal quantity of serum according to their weight, the hypoleucocytosis was found to persist for twenty-four or even forty-eight hours. In rabbits suffering from injections of virulent cultures of diphtheria it was observed to continue for three to five hours. The more powerful serum produced the greater decrease of leucocytes.

From the examination of dry preparations made before and after injections it became evident that the decrease of leucocytes was principally in the uninuclear and poorly staining multinuclear forms, and not in the ordinary polynuclear cells, which are most affected in toxic hypoleucocytosis. The multinuclear cells, however, were here found distinctly increased in proportion, though diminished in numbers. According to Lowit, in the hypoleucocytosis produced by cooling and exhaustion the uninuclear leucocytes are diminished, while the multinuclear cells are increased in proportion. Shock, on the contrary, reduces principally the multinuclear forms. It does not seem probble that the decrease of leucocytes observed after serum injections can be entirely attributed to any of these factors, for there is certainly as much shock as reduction of temperature or exhaustion attending the injection of serum, but probably not sufficient of any of these influences to noticeably affect the blood. In the writer's experiments two cubic centimetres of normal sheep's serum were injected subcutaneously in rabbits without noticeably affecting the blood. The injections were repeated with the same serum treated with solid camphor, the preservative agent used in the antitoxine, and still no considerable effect was observed in the blood. Under exactly the same conditions the injection of the same quantity of antitoxine markedly reduced the leucocytes in normal rabbit's blood, a reduction which became more pronounced with stronger serum. Unless the technique of these experiments was faulty, it may safely be concluded that the hypoleucocytosis occurring after injections of antitoxine is due principally to the active immunizing agent contained in the serum, and not to shock, or cooling, or exhaustion, or the camphor dissolved in the serum, or the common constituents of all normal animal blood serum.

What, then, is the significance of this reduction of leucocytes following the injection of antitoxine? It has been noted by Isaeff, Cantacuzene, and others that the local afflux of leucocytes after intraperitoneal injection of the cholera germ is much greater in animals treated by preventive serum than in animals not receiving this treatment. Possibly this fact may offer a partial explanation of the hypoleucocytosis observed after injection of diphtheria antitoxine. If the serum does hasten the separation of membrane and reduce septic absorption, as seems probable from the weight of clinical testimony, it must do so largely by an increase of leucocytosis and inflammation at the site of infection. Whether an afflux of leucocytes to the site of the lesion occurs within half an hour after the injection of serum can only be proved by an enumeration of leucocytes in the exudate, or, better, in the inflamed tissues, before and after the injections.

A final possible factor in the blood changes referable to the antitoxine remains for consideration. Most histologists favor the belief that all leucocytes are developmental forms of a single series. As the antitoxine increases the proportion of multinuclear forms while diminishing that of the uninuclear elements, it is possible that some of the uninuclear cells are rapidly transformed into multinuclear leucocytes, thus increasing the phagocytic power of the blood. The length of time required is no objection to this hypothesis, for the production of multinuclear leucocytes is exceedingly rapid in experimental leucocytosis. But, in spite of the evident convenience of such an explanation, there seems to be no sufficient basis on which it can rest. Most of the recent evidence has told against the theory that all or any two forms of leucocytes belong to one series. Zenoni's work may be mentioned as one of the most convincing studies of this character, in which he found no connection whatever between the various forms of leucocytes during the excessive variations in their numbers which follow repeated large hæmorrhages. Not wishing to enter further into this discussion, it may be said of the dry preparations studied in the present cases that no transitional forms were seen between the large uninuclear cells and the multinuclear cells with compact nucleus. Further, because of differences in the size, form, and staining quality of the nucleus, and in the quantity and staining reaction of the protoplasm, it is believed that no such transition forms existed in these preparations. Between the small uninuclear cells with compact nucleus and the multinuclear leucocytes transitional forms were abundant, but these cells were much less affected by the injections than the large uninuclear elements were. While, therefore, it is possible that the increase in the proportion of multinuclear leucocytes after injections of antitoxine partly results from rapid development of these cells from uninuclear elements, the writer can offer no evidence that such a change actually occurs.

Consequently, the evidence at hand favors the belief that the hypoleucocytosis produced by the antitoxine is due to a negative chemotactic action residing in the immunizing principle contained in the serum. In the hypoleucocytosis produced experimentally by injection of chemical agents the leucocytes have been found to lodge in the visceral capillaries, frequently causing thrombi in the organs. Very large injections, however, are necessary to produce such lesions, and the small doses, comparable to an injection of antitoxine, cause such slight changes in the number of leucocytes in the capillaries that an increase can be determined only by careful enumerations (Goldschneider and Jacob, Werigo, etc.). Nevertheless, this negative chemotactic action of the antitoxine must be regarded with suspicion, until it is shown by experiment that the injection does not cause a lodgment of leucocytes in the visceral capillaries, and does not remove from the circulation a certain number of available phagocytes. When ten thousand to fifteen thousand leucocytes per cubic millimetre are suddenly removed from the circulation, and the patient dies within a short period, or in a few days, as occurred in at least three of the present cases, one must hesitate before recommending the use of antitoxine after a very grave condition has been established in diphtheria.

In small and repeated doses the necessary quantity of serum could probably be administered without producing such a rapid and marked diminution of leucocytes.

Besides the reduction in the total number of leucocytes and increase in the proportion of multinuclear forms, the antitoxine strikingly influenced the staining capacity of the leucocytes, as seen in salt solution and less plainly in dry preparations. In several instances an improvement in the staining capacity of the leucocytes was apparently to be observed within thirty minutes after the injection; but the indications of these cases are to be distrusted, because, in the most evident example, a successful intubation was combined with the injection of antitoxine. In rabbits, after partially destroying the staining capacity of leucocytes by repeated injections of diphtheria cultures, the antitoxine seemed to produce an immediate improvement in the leucocytes but once in four experiments. Yet it is an interesting fact that five children in whom the numbers of stainless leucocytes did not diminish immediately after the injection all died. When, however, a period of twelve hours is allowed to intervene after the use of the serum, the examination of the blood in both clinical and experimental diphtheria left no doubt that in favorable cases, after the injection of antitoxine, the staining capacity of the leucocytes is greatly improved. This period may very well allow other influences than the antitoxine to affect the leucocytes, but the fact of the sequence remains unaltered. In the fatal cases the change in the leucocytes was entirely absent or less evident, and soon succeeded by increasing failure of staining reaction.

Significance of the Staining Reaction of Leucocytes.—Having followed the leucocytes and their affinity for gentian violet through many of the phases of diphtheria, and having noted the close relation of this property to the symptoms and prognosis of the disease, some questions arise concerning the significance of the staining capacity of the leucocytes and its possible importance in the process of immunization.

Does the affinity of the nuclei of leucocytes for certain dyes depend upon the presence in the nuclei of some chemical principle essential to phagocytosis, and which is altered or destroyed by bacterial poisons? Does the condition of the nucleus bear any relation to the phenomena of chemotaxis? With all the evidence now accumulated in favor of the phagocytic theory, we do not yet know the ultimate reason why the leucocytes absorb and digest bacteria under some conditions and fail entirely to do so in others. A short review of the present theories of immunity will serve to place the subject in its proper bearing.

In 1891 Klemperer protected animals against fatal doses of the vibrio of Metchnikoff and of the pneumococcus of Fraenkel by injections of serum from patients cured of cholera and pneumonia. Behring and Kitasato secured the same result in tetanus and diphtheria. On this and other such evidence rests the antitoxic theory of immunity—that the serum of patients cured of a disease contains a substance which neutralizes the poison produced by that germ. The mode of destruction of the germ itself was not investigated in these experiments.

The bactericidal theory presents much stronger claims for consideration. In 1890 Behring and Nissen found that the vibrio of Metchnikoff grew luxuriantly in normal pig's serum, but soon perished in large numbers in the serum of immune animals. They maintained that the serum of inoculated animals contained unknown principles capable of killing the vibrio within or without the organism, and that this principle was the cause of immunity. Zäslein, in 1890, proved that the injected vibrio found its way into the blood, where, in the inoculated animal, it soon perished, but in the susceptible animal increased enormously. Studying the accompanying leucocytosis and observing no increase of leucocytes in the inoculated animal and extreme leucocytosis in the other, he concluded that phagocytosis was little concerned in the process of cure and that the blood serum alone was the bactericidal agent. Pfeiffer, in 1892, finding that after large intraperitoneal injections the peritoneal exudate contained very few vibrios at the time of death, inferred that, while the animal died of intoxication, the germs had not withstood the bactericidal action of the blood serum.

Pfeiffer and Wasserman, in 1893, corroborated the previous observation of Gamaleia, that fresh and inoculated animals are equally susceptible to the toxines produced by the vibrio of Metchnikoff. They believe that in the inoculated animal certain phenomena occur at the point of inoculation which prevent the formation of toxines. Neither is immunity due, in their opinion, to the bactericidal action of blood serum, which they found merely to retard the growth of bacteria, which later multiply abundantly. Phagocytosis they regard as a secondary process, for when the peritoneal cavity is infected with cultures sterilized by drying, and containing neither living germs nor toxines, phagocytosis still occurs. Further, in inoculated animals under the influence of opium, choleraic infection of the intestine is readily fatal, although phagocytosis is abundant and many pus cells are found in the intestine containing partially digested vibrios. The process of immunity, they conclude, is therefore neither bactericidal nor antitoxic nor phagocytic, but dependent upon very complex and still unknown factors.

Pfeiffer and Isaeff, in 1894, infected the peritoneal cavity in guinea-pigs with a cholera vibrio twenty-four hours after treatment with cholera serum. Examining subsequently the peritoneal exudate, they found that in all cases in which the serum acted as a specific, the germs perished within two or three hours, and they convinced themselves that the great majority of the germs were destroyed without phagocytosis.

Buchner presents evidence to show that the bactericidal action of the blood depends upon an unstable albuminoid compound, "alexine," contained principally in the leucocytes. By injecting a vegetable irritant, "*Aleuronatmehl*," into the pleural cavity of the rabbit, he obtained a purulent exudate free from bacterial products, which was more actively bactericidal than normal blood. That the bactericidal action of this exudate is independent of phagocytosis he concludes from the fact that after freezing—treatment which must destroy all phagocytic power—the bactericidal action of the exudate is not at all impaired. Phagocytosis he therefore regards as a secondary process in the destruction of bacteria within the organism.

The phagocytic theory has been largely in the hands of the French school of scientists. In 1891 Metchnikoff, continuing the observations of many previous studies, corroborated the results of Behring and Nissen as to the bactericidal power of vaccinal serum, but maintained that the survival of bacteria within the organism was much greater than in culture media prepared from the serum of vaccinated animals. After intraocular injections, he found marked local phagocytosis in the refractory animal, but absence of this phenomenon in susceptible animals. In the inoculated subject the phagocytes had englobed the vibrios, and, by the examination of hanging drops, he proved that these absorbed bacteria were still active and capable of rapid growth in the supposed bactericidal serum. He proved also that the germs, when introduced into a refractory organism, underwent a distinct increase of virulence.

In 1893 he noted that the therapeutic power of cholera serum bore no relation to the favorable or unfavorable termination of the disease, the patient recovering at times when the blood was entirely lacking in therapeutic virtue.

In 1894 Isaeff found that the bactericidal power of the blood might not be established for three weeks after recovery from cholera, and was then little greater than that of normal serum. He secured varying grades of immunity in guinea-pigs from injections of salt, normal serum, nuclein, and tuberculin. Studying phagocytic reaction, he produced marked local afflux of leucocytes by intraperitoneal injection of each of these agents. After fatal bacterial injections the afflux of leucocytes failed to occur, and the period of negative chemotaxis was continued till the death of the animal. In guinea-pigs previously treated with immunizing serum, injections of bacteria were followed in ten minutes by local leucocytosis. In susceptible animals there was slight local leucocytosis, with no absorption of bacteria; in animals treated with normal serum the local reaction was marked, and many bacteria were taken up by the leucocytes, while in strongly immunized animals the inflammatory reaction was very pronounced and the phagocytosis rapid and complete.

Sanarelli, in a series of experiments conducted during the past year, found that the vibrio of Metchnikoff perished in large numbers in vaccinal serum, but that many survived, and when washed in salt solution and freed from serum the remaining bacteria showed increased virulence.

Very recently, Cantacuzene has published the results of an extended study, and shown the necessity of an afflux of leucocytes to the intestinal tract in the cure of experimental cholera. He has proved that opium narcosis, which suppresses immunity in refractory animals, does so because it first suspends the activity of leucocytes.

Sufficient evidence has thus been reviewed to establish the essential character of phagocytosis and the probable bactericidal action of blood serum in the production of immunity.

(To be concluded.)

TWO ABSCESSES OF THE BRAIN

CAUSED BY SEPTIC EMBOLI RESULTING FROM GUNSHOT WOUND OF THE LUNG INFLICTED THIRTY-TWO YEARS BEFORE.

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HISTORY AND NEUROLOGICAL REPORT BY DR. ESKRIDGE.

I WISH to express my thanks to Dr. Miller and Dr. Levy, the attending physicians, for their invariable courtesy and for their kindness in giving me points in the history of the case about to be reported. Unfortunately, some symptoms that might have aided in diagnosticating the primary abscess were not known to me or either of the attending physicians until after the death of the patient.

Captain E. (retired), fifty-two years of age, born in Ohio, married, white, living in Colorado about thirty years, a mining engineer by occupation, had been a semi-invalid for thirty-two years. The family history is excellent. The patient in childhood was healthy and strong, and continued so until his twentieth year, when, while in the United States army during the war of the rebellion, he was wounded by a Minié ball. The missile struck and fractured the seventh rib on the right side, just external to a perpendicular line drawn from the nipple downward, and lodged in the lower lobe of the right lung. The bullet was not extracted, and soon after he began to suffer from cough, pain in the lower portion of the right chest, and repeated hæmoptysis. Two years later, or in 1865, he sought the climate of Colorado on account of the pulmonary trouble. After his coming here his physician, Dr. Elsner, informs me that at that time he had as many as eight hæmorrhages from the lung in one day. After a while the bleeding from the lung lessened, but did not entirely cease. He was troubled with a persistent cough, and expectorated considerable muco-purulent material, especially on arising in the morning and after exposure to cold. Consolidation of the lower portion of the right lung and bronchial dilatation, with bronchitis, and at times a rather profuse bronchial excretion of offensive muco-purulent material, frequently stained with blood, were evident up to the time of his fatal illness.

At times months would pass during which he was fairly comfortable, but these periods would be followed by a slight pulmonary hæmorrhage and increased bronchial excretion. During the summer of 1894 he began to complain of headache, usually frontal, physical weakness, inability to maintain mental concentration as well as was his wont, and it was observed that he was losing flesh, although his appetite was still good. His digestive powers, which had not been very vigorous for a number of years, became more impaired. Some time in October or November, 1894, he began to complain of pain in the right frontal region of the head. The pain was nearly constant, rarely severe, but was often spoken of as a gnawing sensation. He said that he could compare it to nothing else that would describe it more accurately than an imaginary feeling caused by the gnawing of a rat in this region of the head. The seat of the greatest intensity of the pain was invariably located about opposite the right posterior angular process of the frontal bone. The discomfort was not superficial, but appeared to be seated deep within the substance of the brain. An account of this pain I did not succeed in obtaining until after the patient's death. He continued at his duties as president of an important and rather harassing business enterprise until the day when he was seized with acute cerebral symptoms which confined him to his bed.

February 16, 1895.—He felt as well as usual on the morning of this day; he remained at his place of business until 1 P. M., when he ate a hearty luncheon. He felt comfortable until about 5.30 P. M., when, without any appreciable cause to him, the muscles of the left side of the face and pharynx began to be affected with a clonic contraction. Dr. Miller, Dr. Levy, and Dr. Hershy were hastily summoned. I saw him in consultation with these gentlemen about 7.30 P. M. The muscles of the left side of the face were constantly slightly contracted and the face drawn a little to the left, but at periods of every ten or fifteen minutes the affected muscles would clonically contract rather violently for two or three minutes. One of these paroxysms was just beginning as I entered the room, and, as it was said to be similar in every respect to the preceding ones, I will describe it as it appeared to me.

The frontal portion of the occipito-frontalis muscle was contracting on both sides, more markedly on the left than on the right. The left eye was constantly opening and shutting, while the right eyelids moved slightly at each violent contraction of the muscles of the left eyelids. The movements of the eyeballs were slightly affected. All the muscles of the left side of the face were contracting rather strongly; occasionally the corner of the mouth on the left side was drawn downward, and the platysma myoides muscle contracted quite vigorously. At the same time there was contraction of the pharyngeal muscles which produced more or less of a gurgling sound and caused attempts at swallowing. The laryngeal muscles seemed to be affected slightly with the twitching. None of the muscles of the right side of the face, with the exception of a slight movement of the muscles around the right eye and on the right side of the forehead, were affected. It was found very difficult for him to swallow during the convulsive seizures. The paroxysm lasted four or five minutes, during which he was perfectly conscious, as he had been from the first. He was asked at the time if he had any pain. He pointed to the front of the right side of his head and said "Yes." After the paroxysm ceased the muscles of the face on the left side were slightly contracted, and the face was drawn a little to the left. Occasionally there was a slight winking of the left eye, and not infrequent contraction of the platysma myoides on the left side. The remission lasted from ten to fifteen minutes, when the clonic contraction began again. Owing to the excitement and number of people in the room it was impossible to obtain a detailed history of the case, and a hurried examination revealed but little. It was impossible to examine the fundi of the eyes on account of the lids opening and shutting so frequently. All the reflexes seemed about normal, and no muscles were affected except those of the face, especially on the left side, and those of the pharynx, and to a slight extent of the larynx.

The diagnosis seemed to me to rest between embolism and thrombosis, with the probabilities in favor of thrombosis, on account of the age of the patient and the absence of any cardiac murmur. Had I been aware at the time of the character and extent of his lung trouble my diagnosis would have been an infective embolism. The patient was given a quarter of a grain of morphine hypodermically, with the result of relieving the convulsive movements and giving him a quiet and comfortable night. On seeing him next morning, in consultation with Dr. Miller, there had been no return of the muscular spasms on the left side of the face, but these muscles now seemed slightly paretic and the tongue was protruded a little to the left. Deglutition was still a little difficult, and on attempting to swallow water a paroxysm of coughing was produced and some of the water was regurgitated through the nostrils. There was no distinct aphasia, but speech seemed to be a little indistinct on account of the paretic condition of the muscles of the tongue, lips, and pharynx of the left side. Sensation was normal.

During the next three or four days the patient was fairly comfortable, with the exception of headache in the right frontal region, but he was urged to remain in bed. During this period there was still observed to be some weakness of the muscles of the left side of the face and of deglutition.

On February 21st I was asked to see him again in consultation and found the left side of the face almost completely paralyzed, deviation of the tongue to the left, slight drooping of the left eyelid, and considerable difficulty in swallowing, especially for liquids. The left arm was nearly as strong as the right. I was informed that the temperature since the occurrence of the facial spasms had been normal or subnormal. His mind at that time was perfectly clear, but he looked depressed and seemed to be losing flesh. The deep reflexes were slightly below normal. While his answers to questions were always correct, yet there was observed a mental slowness which was foreign to him in his normal condition, and when asked to press the dynamometer he would always hesitate and look at the instrument in his hand a few seconds before grasping it.

I gave the opinion at this visit that an embolus of an infective nature from one of the pulmonary veins had found lodgment in one of the branches of the middle cerebral artery on the right side, and expressed some apprehension of abscess of the brain.

On the 27th of the month, when I saw him the next time, the paralysis of the left side of the face was absolute, and the patient presented an aspect indicating great prostration. The bowels were obstinately constipated and the mind was obtunded and acted slowly. The face presented a dusky hue and was a little more yellowish than natural. He was still somewhat restless and uneasy about himself, but the anxiety seemed to be less than at my former visits.

On March 5th, when I again saw him, there was a decided change for the worse. Mental hebetude was well pronounced; he was more or less apathetic, and prostration was much more profound. The temperature, as it had been throughout, was about normal or subnormal. The pulse at this time varied from 70 to 80, but I was informed that a few days before it had been down as low as 60. The left arm was decidedly paretic and two days later became completely paralyzed.

On the 8th he was in a semi-conscious condition, and was apparently unable to maintain any continuity of thought. The temperature in the right axilla was about normal, while it was from a half to one degree above normal in the left axilla. The left arm was absolutely paralyzed, and the left foot and ankle muscles seemed to be weaker than normal. On account of his mental dullness it was impossible to test accurately the special senses or the general sensory phenomena, but, as far as I was able to determine, sensation was as good on one side of the body as on the other. The deep reflexes were nearly normal on the right side, but lessened on the left. By the 10th of the month paralysis in the left leg was nearly complete, and on the 11th it was absolute, when an operation for the evacuation of an abscess in the lower Rolandic region was recommended and urged, but this was not consented to until the 13th. In the mean time all evidences of intracerebral suppuration became more and more pronounced, the pulse showing evidence of weakness rather than of brain pressure, and the temperature remained normal or subnormal on the right side and slightly elevated on the left. He remained in a semi-conscious condition during most of the time for three or four days before the operation, but seemed to recognize his wife and attending physician momentarily when aroused, but all other persons were called by the name of his attending physician. When a different name was suggested to him he would seem to realize it for a moment, but it rapidly faded from him.

The following record of temperature, pulse, and respiration has been kindly furnished by the attending physician, Dr. Miller:

March 11th.—9 A. M.: Temperature, right axilla, 98·4°; left, 99·4°; pulse, 72. Evening: Temperature, right axilla, 98·6°; left, 100°; pulse, 78.

12th.—Morning: Temperature, right axilla, 98°; left, 99·4°; pulse, 84; respiration, 24. Noon: Temperature, right axilla, 98·6°; left, 100°. Six P. M.: Temperature, right axilla, 99°; left, 100°; pulse, 84; respiration, 24.

13th.—Temperature, right axilla, 99°; left, 100°; pulse, 99; respiration, 24. Noon: Temperature, right axilla, 98·8°; left, 100°; pulse, 84; respiration, 20.

The eyes were carefully examined with the ophthalmoscope on several occasions, but no changes in the fundi or discs were discovered.

A surgical operation for the relief of the patient was agreed to about 3 P. M. of March 13th, when he was becoming rapidly comatose, and all the physicians in attendance were of the opinion that life, unless radical measures were adopted, could not be prolonged more than twenty-four hours.

For reasons which I shall explain later, I marked the point about midway between the lower end of the fissure of Rolando and the horizontal branch of the fissure of Sylvius for the centre of the trephine.

OPERATION AND SURGICAL REPORT BY DR. PARKHILL.

The skull having been mapped out by Dr. Eskridge, the Parkhill brain marker was used to transfer these landmarks to the bone. A semilunar flap was made with its base downward. This brought into view the markings over the mouth, lips, tongue, throat, and larynx centres. A three-quarter-inch trephine was employed. The bone proved to be exceedingly hard, with scarcely a trace of diploic structure. When the button was removed, the membranes were found bulged somewhat into the opening, but no pulsation either on palpation or inspection could be detected. The dura was then incised and seemed to be normal, as did also the arachnoid and pia, together with the cortex brought into view. After the suggestions of Macewen, I used a small trocar and cannula with which to make the exploration. This was passed first forward and slightly downward, but discovered no pus. It was then withdrawn to the cortex and passed backward, inward, and slightly downward from the same puncture. At a depth of about half an inch from the surface of the brain considerable resistance was apparent. This was evidently the wall of the abscess, for when it was passed the pus immediately made its appearance. From an ounce to an ounce and a half of pus was obtained. The trocar was attached to the nozzle of a fountain syringe which was filled with normal salt solution. A glass tube, having twice the calibre of the cannula, was inserted into the abscess cavity by the side of the original instrument. This was in order to give a larger opening for the exit than for the entrance of the fluid. When the water ran out from the abscess cavity perfectly clear this instrument was removed and a small rubber tube passed into the cavity. The external end of this was brought out through a puncture in the middle of the flap. The flap was was then sutured in place, and the usual sterilized dressing applied. There was hardly any shock following the operation, and four hours afterward his temperature was 98·4°, pulse 92. At eight o'clock the following morning his temperature was 98·8°, pulse 98. From that time onward his temperature gradually rose, until at the time of his death, four days after the operation, it had reached 102·2°, and his pulse was 132. I have no doubt that, if the second abscess had been discovered and drained, the patient would have perfectly recovered. The original puncture of the trocar and cannula must have gone within a hair's breadth of this abscess, and yet if that had been discovered the result would have been the same, because I should not have explored for another.

This case brings up the very interesting question whether one would be justified, after discovering one abscess of the brain, in exploring for another. The danger of infection of sound tissue would have to be taken into consideration, and yet this case would seem to indicate that under certain conditions it might be justifiable.

SOME POINTS IN THE HISTORY OF THE CASE SUBSEQUENT TO THE OPERATION, AND AN ACCOUNT OF THE AUTOPSY, WITH REMARKS BY DR. ESKRIDGE.

It is of importance that some of the symptoms subsequent to the operation should be given in detail in order to compare them with those of other recorded cases of the same nature in which all the pus has been evacuated and recovery followed. By this method it may be that we shall, after a more extended experience, be able to determine by the symptoms whether, when the contents of one abscess have been got rid of, we have yet another that has not been reached.

On the morning of the day of the operation the temperature in the right axilla was 99°; in the left, 100·2°; pulse, 99; respiration, 23. At noon the temperature in the right axilla was 98·8°; in the left, 100°; pulse, 84; respiration, 20. About one degree higher had the temperature been found in the left axilla than in the right for several days immediately preceding the operation.

A few minutes after the patient was removed from the operating table the temperature was equal in each axilla, and registered 98·4°. The pulse and respiration for that hour are not recorded on the chart.

March 13th.—8 P. M.: Temperature, right, 98·8°; left, 99°; pulse, 92; respiration, 23. 10 P. M.: Temperature, right, 99·2°; left, 99·4°; pulse, 91; respiration, 23.

14th.—2 A. M.: Temperature, right, 100·2°; left, 100°; pulse, 91; respiration, 26. 4 A. M.: Temperature, right, 99·4°; left, 100·2°; pulse, 91; respiration, 24.

A careful record of temperature, pulse, and respiration was made every hour by a trained and careful nurse. The temperature during the remainder of the forenoon registered about 99° in each axilla; pulse varied from 85 to 97, and respiration from 24 to 30. Physical prostration was intense, but apparently less than before the operation. Mentally he was decidedly brighter, but attempts to answer questions soon exhausted his mental power. From 2 P. M. of the 14th to 4 A. M. of the 15th the temperature ranged from 100° to 100·8°, being nearly the same in each axilla, occasionally a little higher on the right side than on the left, but more commonly its difference was in favor of the latter. The difference during this time did not amount at any time to more than four tenths of a degree, and usually to only two tenths of a degree.

The pulse varied from 97 to 100, and respiration from 24 to 32. It was still difficult for him to swallow liquids, as it had been before the operation. Although he seemed to be getting an abundance of nourishment and stimulants, yet it was evident that the patient was getting weaker. At 6 A. M. of the 15th it was reported that he had passed a comfortable night; the temperature in the right axilla was 99·8°; left, 99·4°; pulse, 97; respiration, 27. From 8 A. M. to 8 P. M. of the 15th the patient seemed to be doing well, and once during the day he smiled at his wife and made a pleasant remark. While Dr. Parkhill was dressing his head, he took a cigar from the doctor's vest pocket and put it in Dr. Miller's pocket, and seemed to enjoy the pleasantry, as he knew Dr. Miller did not smoke or use tobacco in any form. About 11 P. M. he had a slight pulmonary hæmorrhage, and at midnight the temperature was: right, 100·4°; left, 100·2°; pulse, 124; respiration, 44. Four hours later the temperature remained about the same, but respiration was 49. During the forenoon of the 16th the temperature was about 101°, or a fraction of a degree below; pulse, 114 to 120; respiration from 34 to 49. Physical prostration was increasing, and it was with difficulty that he could swallow any food. During the afternoon the temperature registered 103·4°; pulse, 142; respiration, 53. It was impossible for him to swallow, and he was nourished both by the rectum and by the nasal tube. Rectal enemata had been resorted to throughout his stay in the hospital. From 11 P. M. of the 16th to 3 P. M. of the 17th, when death occurred, the temperature ranged from 101° to 102·4°, being lower than it had been the day previously.

Autopsy, March 17, 1895, at 8 P. M., five hours after death, by Dr. E. R. Axtell, pathologist to the hospital. The skullcap was very thick, with very little diploic structure. The adhesions of the dura to the bone were very firm over the vertex. The trephine opening in the skull was found to correspond to the junction of the upper with the middle third of an imaginary line drawn from the lower end of the fissure of Rolando to the point where the fissure of Sylvius bifurcates into the vertical and horizontal branches. No adhesions existed between the pia and the dura. Over the left hemisphere some recent exudate was found on the pia over a space about two inches square in the region of the vertex. Membranes, vessels, and brain presented a normal appearance over the base. The left hemisphere showed no evidence of disease in the cortex, white substance, or ganglia. The left lateral ventricle contained about the normal quantity of fluid.

Right Hemisphere.—In the frontal lobe there was an abscess. It had a firm capsule and occupied the place of and had destroyed nearly all the white substance of the lower and anterior two thirds of this lobe. It extended backward to about an eighth of an inch of the anterior tip of the lateral ventricle, from the cavity of which it was separated both by its own cyst wall and by an adhesive obliteration of the anterior third of the cavity of the ventricle. The abscess did not directly interfere with the motor region. The pus, of a dirty, greenish-brown color, was viscid and extremely fœtid. There were about three ounces of it. The capsule seemed very firm. A second abscess, smaller than the first, but also encapsulated, was found in the white substance immediately beneath the lower portion of the ascending frontal and parietal convolutions, and the parts around the lower end of the fissure of Rolando (third frontal). Its sac, which had been pierced by the trocar of the surgeon at the time of the operation, was less firm than that of the large abscess. Its cavity was capable of containing about a fluidounce and a half and was about half full of fœtid pus. No connection existed between the first and second abscesses. The brain substance around the abscess was softer than normal.

Chest.—The left pleura was free from adhesions, except for a slight area over the diaphragm. The right pleura was universally adherent by firm fibrous tissue which could be broken down only with great force. Beneath the sixth and seventh ribs, at a point where they had been resected thirty years before in the axillary line, the fibrous bands were so strong that they had to be cut with a knife. These strong adhesions also existed over the diaphragm for a space of two or three inches from the ribs. The left lung presented evidence of extensive catarrhal pneumonia throughout the lower lobe. Section of the bronchi in this lung showed the mucous membrane in a state of subacute inflammation. The right lung was normal in the upper third. The lower third was a solid mass of fibrous tissue, and the bronchi here, as well as in the middle lobe, presented a well-marked condition of bronchiectasis and the cavities were filled with pus and mucus. In the lower lobe of the right lung there was found a large Minié bullet which was greatly flattened at the conical end. The bullet rested in a dense white capsule of connective tissue which in places was fully four tenths of an inch thick. The heart and pericardium were normal. The spleen was small, but showed no evidence of disease. Both kidneys were healthy. The liver was normal. The gall bladder was distended with gallstones of two varieties, the black and the pink. The cystic duct was obstructed by a soft, crumbling stone. The spinal cord was not examined. The bone of the right arm was exposed just above the elbow joint. At this point the bullet of thirty years before had plowed its way through the bone. A resection had been made and good union obtained, with but slight bulging of the callus anteriorly.

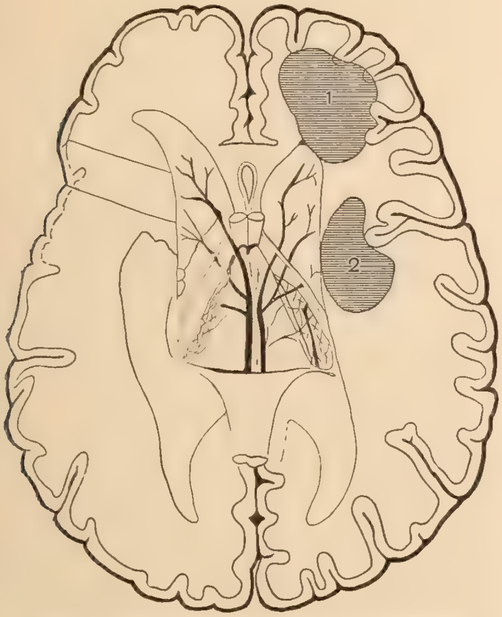

Fig. 1.—Horizontal section, showing both abscesses.

Examination by Dr. H. C. Crouch of the contents of brain abscess No. 2, removed at operation on March 13th: "Microscopically the direct examination showed the material to consist of pus cells (the majority of which were more or less in a condition of fatty degeneration), and the *débris* of such, with some fat crystals and many fat globules; a few broken-down nerve cells, red blood-corpuscles, and a small amount of pigment, apparently hæmogenic in origin. A search for pigment of pulmonary origin (anthracosis) failed to give any positive results.

"Cover-glass preparations stained for bacteria showed the presence in considerable numbers of what were apparently streptococci. These stained according to Gram, which methods gave the best results. Seen thus, the micro-organisms were mostly in chains, some of them being of considerable length, and would correspond in general appearance to the *Streptococcus pyogenes.* The individual cocci varied in size. Their general appearance seemed to indicate degeneration and involution forms. The cultures seemed to confirm this. Gelatin tubes were inoculated and plates prepared therefrom. Stroke cultures were made on glycerin-agar in tubes and dishes. The cultures remained sterile, however, in spite of the apparent abundance of the cocci in the cover-glass preparation."

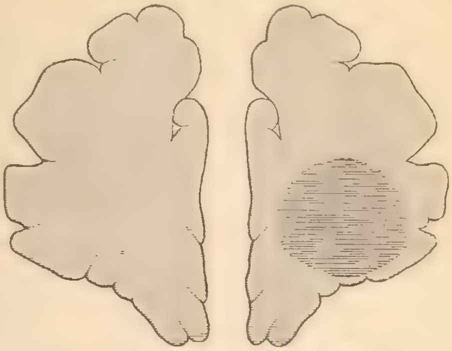

Fig. 2.—Pre-frontal section, showing primary abscess, or abscess No. 1.

Microscopical report of the cyst wall and of the contents of the primary abscess by Dr. Axtell:

"The microscopical examination of the pus taken from the abscess shows pus cells and granular matter. The pus cells were much less distinct than they are usually seen. They all presented granular disintegration. No crystals and no calcareous matter could be found.

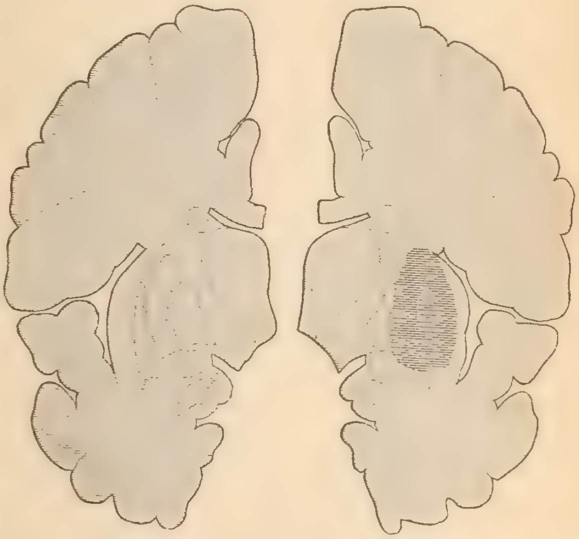

Fig. 3.—Frontal section, showing abscess No. 2.

"The examination of the capsule surrounding the abscess showed it to be about a sixteenth of an inch thick, of some firmness, with a smooth inner surface. Under the microscope it was found to be composed of loose connective-tissue elements and granulation tissue with a limited blood supply. The brain substance adherent to it was infiltrated with lymphoid cells, and the cerebral elements presented fatty degeneration."

After learning the full extent of the patient's lung trouble and its character, the diagnosis of cerebral abscess following a septic embolism from the lungs was the only rational conclusion that could be reached. Had I known the full extent of his head symptoms during the months preceding the beginning of his fatal illness, I am inclined to think that I should at least have suspected an abscess of older date than the one which was diagnosticated. From the time of the first manifestations of the facial spasm to the death of the patient, only twenty-nine days elapsed, yet at the autopsy the second abscess was found surrounded by a capsule whose walls were fibrous. From the study of traumatic abscesses of the brain it is believed that such a capsule will not form before the end of the second month. If such a length of time is required for the formation of a fibrous capsule, we must conclude that the more recent abscess was of older date than one month, and that the symptoms that were thought to be due to embolic occlusion of an artery were caused by the destructive irritation of the abscess in its extension backward and involving the motor region. There seems to be nothing inconsistent with such an explanation for the terminal symptoms. It would seem improbable that a person should be able to attend to his business with two large abscesses in the frontal lobe of his brain, but equally as great a destruction of brain tissue has been observed in this region of the brain unattended by obtrusive symptoms.

A study of the meagre temperature record that was kept of the case prior to the operation did not throw much light on the nature of the intracranial mischief, for the reason that the brain symptoms were complicated by those of the lung trouble. The three days immediately preceding the operation, the only time during which frequent temperature observations were made and careful records kept, the temperature was normal or subnormal on the right or non-paralyzed side, except on one occasion, when it reached 99° F., while the same thermometer registered one degree higher in the left axilla than in the right. These observations were made with great care, the thermometer being held in the axilla whose temperature was first taken ten minutes, and in the second axilla five, the instrument still being warm from the first axilla when it was placed in the second. To prevent any possibility of error, the temperature was taken in the right axilla first at one time, and in the left axilla first on registering the temperature the next time, and thus alternately obtaining the temperature of right or left axilla first. Subsequent to the operation the temperature was found nearly the same in each axilla, the difference in the axillæ never being more than four tenths and usually only two tenths, and the difference was not always found in favor of the left side. The temperature being about the same in each axilla after the removal of the pus from the right motor region of the brain would seem to corroborate the observation made by me in a case observed in Philadelphia in 1882, and communicated to the College of Physicians in that city in 1883, in a paper entitled Report of Three Cases of Abscess of the Brain (*Transactions of the College of Physicians*, 1883, p. 77). In one of the cases there reported in full, the temperature was found from five tenths to three degrees and four tenths, Fahrenheit, higher on the paralyzed than on the unaffected side, extending over a period of more than two months, and only on one occasion was it observed to be equal or greater on the unaffected side of the body. I have made similar observations in numerous other cases of abscess or tumor of the brain involving the motor region. If this result should be substantiated by future observations, it may serve a useful purpose in differentiating ordinary vascular from irritative focal lesions of the brain.

In endeavoring to select a point for the removal of the button of bone from which the abscess might be most easily reached, it was necessary to take several things into consideration. The entire left side, including face, arm, and leg, was completely paralyzed. If the trephine opening had been made over the arm centre, as is often done in operating for the relief of complete hemiplegia due to the presence of a tumor, it would have been very difficult to reach the abscess from this point and impossible to have kept it well drained. Even if the centre of the trephine opening had been over the middle of the face centres, thorough drainage of the abscess cavity would not have been easy to maintain. It is a well-recognized fact that abscesses of the brain are most commonly situated in the white substance, and that much of the loss of function resulting from their presence is due to pressure and œdema of adjacent structures. In the case under consideration, as the early symptoms were attended by involvement of the muscles of the larynx and pharynx, the platysma myoides, as well as the muscles of the face, and in the subsequent progress of the disease the muscles innervated by the cortical centres below the lower end of the fissure of Rolando were seriously affected, it was thought that the lower portion of the abscess was situated nearly on a level with the horizontal branch of the fissure of Sylvius. The autopsy showed that the button of bone had been removed from a point where the abscess was most easy of access and thorough drainage the least difficult to accomplish. In the case reported in this paper there were two abscesses; the contents of one were evacuated, while the other abscess remained undetected. If we compare the symptoms subsequent to the operation in this case with those of brain abscess in which all the pus has been got rid of at one operation, are there appreciable differences that will enable us in a similar case to the one here reported to determine, when one abscess has been evacuated, whether another yet remains in the brain?

We must remember that the symptoms of most cases of abscess of the brain are complicated by those of the morbid condition that has given origin to the infective material that has found a lodgment in the brain and given rise to the abscess. In the case under consideration it was impossible to determine how much the prostration and general depressed condition were due to the serious lung trouble and how much to suppuration in the brain. In uncomplicated abscesses of the brain the temperature is usually normal and often subnormal, the pulse slow, and respiration infrequent; but very soon after the pus has been evacuated the temperature ascends to about 100° to 101°, the pulse to 100 or more, and respiration to 16 or 20. In the case now under consideration, the temperature on the paralyzed side fell about one degree to normal, and was the same as that of the right side both before and after the operation; and for the next six hours it was about half a degree above normal in each axilla, and did not reach 100° until eight hours after the operation. After this it ranged from 99° to 100° for six hours more. The pulse remained about the same in quality and frequency for twenty-four hours subsequent to the operation as it had been before it. Respiration also showed no perceptible effect from the operation. These symptoms were considered at the time, but the purulent condition of the lungs prevented their attracting attention to lead me to suspect another brain abscess. The patient's mental condition was so much better forty-eight hours after the operation than it was before it that, although he was failing physically, I was inclined to attribute this to the condition of the lungs rather than to that of the brain, especially as respiration became so rapid. Death finally took place by the lungs rather than by the brain, as the patient did not become entirely comatose until about twelve hours before death, although the respiration was 50, the pulse from 130 to 135, and he was deeply cyanotic for thirty-six hours before death. Undoubtedly the presence of the large unevacuated abscess in the brain contributed to his death. It hastened it, and would have caused death irrespective of the lung trouble; but it is more than probable that had the lung difficulty not been so serious he would have made a temporary and imperfect recovery after evacuating one abscess, as the brain was not found markedly œdematous around the old or primary abscess, whose capsule was firm and unyielding.

It may not always be possible to determine by the symptoms the presence of another abscess in the brain, after one has been evacuated, if the brain symptoms are complicated by those of the primary morbid process; but in the uncomplicated cases a careful study of the pulse and temperature will greatly aid in the diagnosis, and even in such a case as the one reported in this paper an analysis of the symptoms will put the physician upon his guard, and with accumulated experience may lead to an accurate diagnosis of the most complicated cases. We have much to learn in regard to abscess of the brain, and every case should be exhaustively studied and the symptoms recorded until we have a fund of information sufficient to guide us in the analysis of the symptoms of the most obscure diseases of the brain.

The American Electro-therapeutic Association will hold its fifth annual meeting in Toronto, Canada, on Tuesday, Wednesday, and Thursday, September 3d, 4th, and 5th, under the presidency of Dr. A. Lapthorn Smith.

The Honorary Degree of LL. D. has been conferred on Dr. S. Weir Mitchell, of Philadelphia, by the University of Edinburgh.

The Yale Medical School.—It is announced that the lengthening of the course to four years is to go into effect in September, 1896.

THE
DIAGNOSIS OF CONCEALED TUBERCULOSIS.

By B. K. Rachford, M. D.,
CLINICIAN TO THE CHILDREN'S CLINIC, MEDICAL COLLEGE OF OHIO, CINCINNATI

The purpose of this paper is to show that concealed tuberculosis, which is one of the most common diseases of childhood and young adolescence, is characterized by a well-defined group of clinical phenomena, which, if rightly understood, can be depended upon to establish a diagnosis.

Concealed tuberculosis means for the most part a tuberculosis of deep-seated lymphatic glands, but it may also include a beginning tuberculosis of bones and serous membranes, or of any other tissues so located in the body that they may conceal for a time an active and destructive tuberculosis. The great clinical importance of this phase of tuberculosis depends on the fact that it may continue for a long period of time without pulmonary tuberculosis or general tuberculous infection, and that during this time it is, as a rule, amenable to treatment; but, if overlooked or neglected, it may develop into a pulmonary, a meningeal, an acute miliary, or some other incurable form of tuberculosis. Tuberculosis of lymphatic glands* is much the most common and most important form of tuberculosis in childhood, and only in a small minority of cases is it associated with pulmonary tuberculosis; and in these cases the pulmonary tuberculosis is, as a rule, secondary to the glandular tuberculosis. One may say, therefore, that nearly all tuberculosis in childhood begins as glandular tuberculosis, and that a minority of these cases afterward becomes pulmonary, meningeal, or general tuberculosis. Glandular tuberculosis is pre-eminently a disease of childhood; it almost always begins and usually spends its activity or terminates in a more active form of tuberculosis before the twentieth year. Primary infection occurs, as a rule, in the tracheo-bronchial or mesenteric lymphatic glands—that is to say, in the deep-seated or hidden lymphatics—and is therefore in the beginning a concealed tuberculosis, and as such it may remain for months or years, with slight or no evidence on the part of the external lymphatics of the destructive tuberculous disease within.

Concealed tuberculosis, therefore, in the sense that I here use the term, is the characteristic tuberculosis of childhood, and is more prevalent than all the other chronic diseases of childhood taken together. It is all about us every day in our asylums, our schools, and our homes; masquerading as a pretuberculous condition, as anæmia, neurasthenia, lithæmia, malaria, and as other ancient and modern medical Will-o'-the-wisps. But in the mean time it progresses apace, and too often only casts off its disguise after irreparable damage has been done.

This is by no means a fanciful picture; it is fact, supported by clinical and pathological findings. Osler says,† in speaking of tuberculosis of the tracheo-bronchial glands: "Certainly, in a very large proportion of all cases of tuberculosis in children, it would appear that the first infection was in these structures. . . . Of one hundred and twenty-five cases examined by Northrup, the bronchial glands were tuberculous in every case; . . . in thirteen the disease was limited to the bronchial glands alone." And, in speaking of tuberculosis of the mesenteric lymphatic glands, he says: "Tuberculous disease of these glands is extremely common; thus, of one hundred and twenty-seven cases of fatal tuberculosis in children noted by Woodhead, these structures were involved in a hundred." While Ashby states that, of one hundred and three consecutive post-mortems on children that had died of tuberculosis, in sixty-two there was tuberculous ulceration of the intestines; in seventy-one, cheesy mesenteric glands; in fifty-five, both ulcers and cheesy glands; in seven, tuberculous ulcers without involvement of the glands; and in sixteen, cheesy glands without ulcers. In speaking of the symptomatology of concealed tuberculosis of the tracheo-bronchial glands, the same author says: "In the great majority of instances there are no indications whatever, and even in enormous enlargement pressure signs may not have been present. Authors differ extremely in their views on this point. Many hold, and I think correctly, that the manifestations, as a rule, are very slight." Concerning tuberculosis of the mesenteric glands, he says: "In a great many instances this condition is found accidentally in children who have died of other diseases." Ashby, in a paper on scrofulosis,* writes: "Glandular enlargement in most cases is very insidious. . . . A gland may remain in a quiescent state, or slowly go on caseating for many months or years, and the period during which it may remain passive is too variable to admit of any statement as to time."

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* *Archives of Pædiatries*, May, 1893.

† *American Text-book of the Diseases of Childre*

The clinical observations upon which this paper is based were made in the children's clinic of the Medical College of Ohio and in three convents of the Good Shepherd in or near Cincinnati. The inmates of these convents, like all others of the same order, are notoriously tuberculous communities. They are young girls between the ages of six and twenty, most of whom have inherited a predisposition to tuberculosis, and all of whom are more or less exposed to the contagion of tuberculosis in the convent. The lives of many of these girls before entering the convent have been spent in unhygienic apartments, surrounded by tuberculosis, poverty, and crime. It is not surprising, therefore, that the records of these convents show that, of the last forty-one deaths occurring among these girls, all but two were due to tuberculosis.

With these preliminary remarks in explanation of my theme and of the opportunities which I have had for studying it, I shall ask attention to the following observations concerning its symptomatology:

1. Family history of tuberculosis is, as we shall see, a very important aid to interpreting the value of certain signs and symptoms in the diagnosis of concealed tuberculosis.

2. History of exposure to tuberculous contagion, especially in infancy and early childhood, is also of importance in sustaining the diagnosis of concealed tuberculosis.

3. Pronounced anæmia without apparent cause is strongly suggestive of concealed tuberculosis.* In young convent girls of tuberculous stock this symptom may, as a rule, be relied upon to make a diagnosis of concealed tuberculosis, even though other symptoms of this disease be wanting. This very strong statement is based upon careful clinical observations and is strongly supported by the following facts:

Glandular tuberculosis, the most common form of tuberculosis in childhood, produces much more profound anæmia than pulmonary tuberculosis, and it is the form of tuberculosis most commonly concealed.

Convent girls with no evidence of personal tuberculosis, but having a family history of tuberculosis, are more anæmic than the same class of girls with a family history free from tuberculosis. Eighty girls apparently free from tuberculosis, but with a clear tuberculous family history, had an average of seventy-eight per cent. of hæmoglobin, while forty-one girls apparently free from tuberculosis, having a family history free from tuberculosis, had an average of ninety per cent. of hæmoglobin, a difference of twelve per cent. of hæmoglobin in favor of the girls with good family histories. This difference is very probably due to "concealed tuberculosis of the deep-seated or hidden lymphatics." The figures are even more striking if we group these girls into anæmic (less than seventy-five per cent. of hæmoglobin) and non-anæmic (more than seventy-five per cent. of hæmoglobin) classes, using those only that gave a clear family history. We find that of thirty-seven anæmic girls thirty-five gave family histories of tuberculosis, and that only two gave family histories free from tuberculosis; that of seventy-one non anæmic girls, thirty-five gave family histories of tuberculosis, and thirty-six gave family histories free from tuberculosis.

The evidence that concealed tuberculosis is the cause of the anæmia is made still more convincing by the following facts: Of fifty-one anæmic girls giving a clear history of exposure or non-exposure, in early childhood, to the contagion of tuberculosis by living in the room with a tuberculous case, it was found that the forty-one girls with histories of exposure to contagion had an average of sixty-three per cent. of hæmoglobin, and that the ten girls that had not been exposed to the contagion in their early childhood had an average of sixty-nine and a half per cent. of hæmoglobin. It may also be noted in this connection that out of thirty girls with less than sixty-five per cent. of hæmoglobin, only four gave histories of non-exposure to tuberculous contagion in early childhood. These observations indicate that not only the family history of tuberculosis but also the early exposure to tubercular contagion is instrumental in producing the anæmia, and it is difficult to see how these conditions could be factors in producing anæmia except through the agency of an active tuberculosis. These are among the important clinical observations that have led me to believe that in convent girls pronounced anæmia without other apparent cause is a most important diagnostic symptom of tuberculosis--so important, in fact, that if other signs of tuberculosis be absent I am almost willing under these conditions to base a diagnosis of concealed tuberculosis upon this symptom alone.

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* Keating. *Cyclopædia of Diseases of Children.*

* I have previously published two papers on this subject, one in the *New York Medical Journal*, July 30, 1892, and the other in the *Archives of Pædiatrics*, November, 1892.

The anæmia of tuberculosis is, as I have elsewhere shown,* a simple anæmia; that is to say, the reduction of corpuscles as a rule keeps pace with the reduction in hæmoglobin; at times, however, the anæmia approaches the chlorotic type.

4. Irregularity and early appearance of the menstrual function may be an evidence of concealed tuberculosis. I made careful inquiries concerning the menstrual function in one hundred and sixty-two convent girls selected because they could give clear non-tuberculous or tuberculous family histories. These girls were selected without regard to the degree of anæmia that existed in them, but only because they were apparently free from active tuberculosis and could give definite answers concerning their family histories. The majority of these girls had more than eighty per cent. of hæmoglobin. Of this number seventy-seven gave family histories of tuberculosis and eighty-five gave non-tuberculous family histories. Of the seventy-seven girls with tuberculous family histories, thirty were regular and forty-seven were irregular in their menstrual function. Of the eighty-five girls with non-tuberculous family histories eighty were regular and five were irregular in their menstrual function.

These same facts are even more pertinent when stated in another way. Of the fifty-two girls who were irregular in their menstrual function, forty-seven gave family histories of tuberculosis and five gave family histories free from tuberculosis, and of the hundred and ten girls who were regular in their menstrual function eighty gave non-tuberculous family histories and thirty gave family histories of tuberculosis. These figures show that apart from apparent active tuberculosis there is a relationship between a tubercular family history and irregularity of the menstrual function in young convent girls, and it is difficult to understand how a family history of tuberculosis could produce this irregularity except through an active tuberculosis which in these girls is concealed.

In this connection I wish to record another observation which may have some value—viz., in convent girls a tuberculous family history favors the early appearance of the menstrual function. I have been impressed with the truth of this observation by rather close professional contact with these girls over a number of years, and recently I selected eighty-one girls who knew their family histories and who had no apparent active tuberculosis. In the fifty-three girls with tuberculous family histories the average year of first menstruation was fourteen. In twenty-eight girls with non-tuberculous family histories the average year of first menstruation was fifteen. It is my belief that the influence of a family history of tuberculosis in producing early menstruation is due to the increased irritability and excitability of the nervous system which is among the early manifestations of glandular tuberculosis. I have also noted that the premature menstruation of tuberculous girls does not mark the onset of the establishment of the normal menstrual function. On the contrary, it is, as a rule, followed by great irregularity and abnormity of this function. These observations do not in any way contradict the well-known clinical fact that amenorrhœa is a common symptom of advanced tuberculosis.

5. A scant and pale menstrual flow, followed by a leucorrhœal discharge, may result from a concealed tuberculosis. This condition is very commonly associated with irregularity and early appearance of the menstrual function as a sign of concealed tuberculosis in convent girls.

6. Dyspnœa and pain in the side on slight exercise may be symptoms of concealed tuberculosis. These symptoms are important, since they occur very often in convent girls who present very little or no evidence of *pulmonary* tuberculosis, and anæmia is commonly but not always associated with them. Dyspnœa and pain in the side are, I believe, not infrequently symptoms of a concealed tubercular bronchial adenopathy. These symptoms are made worse by any exercise, and, like anæmia and irregularity in the menstrual function, they are ætiologically related to a tuberculous inheritance.

7. Proneness to catch cold is so commonly an evidence of concealed tuberculosis that its importance as a warning or as an indication that active concealed tuberculosis may exist in the bronchial or other lymphatics can scarcely be exaggerated.

Tubercular bronchial adenopathy, which is one of the commonest forms of tuberculosis in childhood, may and often does exist for years without any more characteristic symptoms of tuberculosis than anæmia and proneness to catch cold. Frequent slight attacks of acute bronchitis, and frequent attacks of coryza occurring during the cold and disagreeable winter months are warning signs that should not be neglected. A child that "catches cold easily" should always be carefully examined for other symptoms of concealed tuberculosis.

8. Abnormal dwarfishness may be an evidence of concealed tuberculosis. By an abnormal dwarf I mean not only one that is under weight, but one that also lacks symmetry in development. The relation of weight and girth of chest to height is of special importance in this particular. A marked disproportion between the weight and height, when associated with poor chest development, should prompt a careful search for other signs of concealed tuberculosis.

It is my belief that dwarfishness of body, as indicated by weight and by a variation from the normal relation of height to weight and chest development, is, as a rule, the result of disease, and that the disease which most commonly causes this condition is tuberculosis; this offers an explanation for the fact demonstrated by William Townsend Porter, that abnormal dwarfs are incapable of doing the ordinary work of their grades in the St. Louis public schools.

9. Progressive failure of health as a symptom of con-

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* *Archives of Pædiatrics*, November, 1892.

cealed tuberculosis is closely associated with abnormal dwarfishness. This is the symptom that most commonly calls attention to the fact that there is something the matter with the child, and prompts the mother or guardian to seek medical advice.

10. Neurotic disease in children is very commonly an indication of concealed tuberculosis. In dispensary practice nervous anæmic children over six years of age with a family history of tuberculosis are, as a rule, themselves tuberculous. I have elsewhere* called special attention to the "tuberculous neuroses of childhood," and have emphasized the importance of suspecting tuberculosis as a factor of every neurosis of childhood. General nervous irritability, hysteria, and incontinence of urine are the neuroses most commonly associated with concealed tuberculosis. In dispensary practice I look upon incontinence of urine, when it exists without apparent local cause, or when it fails to disappear on removal of a local cause, as very suggestive of tuberculosis. Sixty per cent. of the children presenting themselves at my clinic for incontinence of urine have tuberculosis, and forty-five per cent. of all the children with well-marked neurotic disease are tuberculous. Or perhaps a better idea of the value of neurotic disease as a symptom of tuberculosis may be derived from the fact that thirty-four per cent. of the last four hundred and seven tuberculous patients taken from my dispensary records had well-marked neurotic disease.

11. Dyspepsia, associated with chronic diarrhœa or obstinate constipation, may be caused by a concealed tuberculosis. Obstinate constipation, dyspepsia, and profound anæmia are often grouped as evidences of a deep-seated glandular tuberculosis, and in children between the ages of six and twenty chronic diarrhœa, with anæmia and a tuberculous family history, is suggestive of intestinal and mesenteric tuberculosis. It is very important, however, to remember that the diarrhœa of concealed tuberculosis is not by any means always due to a tuberculosis of the intestinal mucous membrane or of adjacent lymphatic glands, but is very commonly a tuberculous neurosis due to general more than local influences. This is an explanation for the fact that chronic diarrhœa even in a tuberculous child is, as a rule, amenable to treatment.

12. Enlargement of external lymphatics, accompanied by a pronounced anæmia not otherwise explainable, is one of the most important signs of concealed tuberculosis. But the superficial glandular enlargement when not accompanied by other symptoms is of little value either in diagnosis or as an indication of the severity of the deep-seated glandular disease, since a very destructive tuberculosis of the bronchial or mesenteric lymphatics may exist with little or no involvement of the cervical or other external lymphatic glands, or *vice versa*.

In the outline of the symptomatology of concealed tuberculosis presented in this paper I have attempted a contribution to the early diagnosis of tuberculosis in children and young adults between the ages of six and twenty. This is the period of life when tuberculosis hides itself away in deep-seated structures and slowly and stealthily proceeds with its work of destruction. It often does irreparable damage before it openly announces its presence by the following signs and symptoms: Caseation of lymphatics, cold abscesses, eczema, phlyctenular ophthalmia, corneal ulcers, suppurative inflammation of the eyelids, otorrhœa, mastoid disease, amenorrhœa, and inflammations of bones, joints, and lungs.

The early diagnosis of glandular tuberculosis in children is important for two reasons: 1. It is curable. 2. When entirely recovered from, it affords partial protection against pulmonary tuberculosis later in life; by this observation I mean to say that a child which has *recovered* from a glandular tuberculosis is not so likely to have pulmonary tuberculosis during early adolescence as his brothers and sisters who have either not had glandular tuberculosis or have not recovered from it in childhood.

323 Broadway.

CHRONIC CATARRHAL LARYNGITIS,

WITH SPECIAL REFERENCE TO ITS ÆTIOLOGY.*

By DWIGHT L. HUBBARD, M. D.

In preparing this paper it has not been my aim to advance any new theory or to lay claim to particular new or advanced ideas of practice, but rather to emphasize that which is already known, but which, I am sorry to say, has been seemingly neglected or forgotten by many practitioners. I shall consider the subject before me on rather broad lines, but I believe lines which legitimately bound it clinically, and it is rather from the clinical than from the theoretical standpoint that we may most intelligently view it. What I have to offer, therefore, is the outcome of clinical observation and experience. Theories unsubstantiated by practice are fallacious, and this is demonstrated in no department of medicine more clearly than when dealing with laryngeal disease.

When we speak of a catarrhal condition of the structures under consideration, we are apt to confine our view to a field at once narrow and in which we lose sight of the consequences which must inevitably follow. Ætiologically, we must look at the whole subject and take a comprehensive view of all effects in their relations to all causes. In the consideration of this most common of all throat affections, I shall treat it very generally, comprehensively, and in a way, I hope, to be of some little value to general medicine.

I should like to take this opportunity to refute the too prevalent notion that the tendency of modern throat specialism is too narrow, and I hold the subject under consideration as a striking example as proving the contrary.

Chronic catarrhal laryngitis is an inflammation of the mucous membrane of the larynx which is purely catarrhal in character or the result of catarrhal conditions previously existing. I would include in the definition that state of the larynx which is not only the direct but the indirect result of inflammation, because these latter conditions are inseparable from the first in their pathological sequence and as regards their ætiology.

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* *Archives of Pœdiatrics*, May, 1893.

* Read before the Fifth District Branch of the New York State Medical Association at its eleventh annual meeting.

When we speak of a catarrhal condition of the structures under consideration, we are apt to confine our view to a field at once narrow and in which we lose sight of the consequences which must inevitably follow.

To quote from one of our leading text books, it is true that chronic catarrhal laryngitis is "simply a chronic inflammation of the mucous membrane lining the laryngeal cavity"; but it means more than that in broad medicine and much more than that if it is ever thoroughly understood or successfully combated. It means a long series of pathological conditions from birth and even before birth, for the dyscrasia descending from parent to child is most active as an ætiological factor. At the time of birth we find conditions which are already of this nature, and we are able to foretell almost to a certainty what the order of pathological sequence will be. A new-born babe is noticed to have snuffles to a greater extent than is accounted for by a normal amount of mucus. We find the nasopharynx obstructed by the presence of lymphoid growths. He takes the breast with some difficulty or perhaps rebels entirely. He may, after the persistence of the nurse, learn to take the breast very well, but the difficult nasal respiration and snuffles continue. He thrives indifferently, and reaches the age of two years or more a mouth breather. He alarms his parents some damp night by being croupy. An acute inflammation has occurred which, in spite of many emetics, spontaneously recovers. He repeates this programme occasionally and reaches finally the age of adult life, and with him has also grown up an adult chronic catarrhal laryngitis, simply as a symptom or accompanying condition to one of hypertrophy wherever it is possible for it to occur in the respiratory tract. He perhaps goes on now, in the natural course of events, to a condition of hypertrophic rhinitis, with the accompanying hyperplasias in the form of polypoid degeneration of the turbinated bodies, increased naso-pharyngeal obstruction, hypertrophy of the pharyngeal tonsils, hypertrophy of the laryngeal mucous membrane from the changed respiratory functions, hypertrophy of the glandular tissues at the base of the tongue, possibly disease of the sphenoidal or other accessory cavities, and with all the superabundant secretions which attend such overgrowths.

We have now all the conditions necessary for the frequent manifestation of inflammation of the larynx. I say we have all the conditions necessary for its manifestation, but by no means all that are possible. Without the abnormities just referred to we have the lymphatic temperament, prone to hepatic congestions, faulty secretions, and general torpidity of the glandular structures. Such individuals are peculiarly liable to inflammations of the respiratory tract. The later tendency of all hypertrophies and hyperplasias in the respiratory region is to degeneration, and a corresponding amount of shrinkage takes place with a corresponding diminution in the secretions. This is seen again and again in the turbinated bodies. The bony portions of these bodies are still large, but their mucous membrane has shrunken and become dry, the nasopharynx has taken on the same condition, and the pharyngeal membrane has lost its brilliancy and assumed a dry, shrunken appearance. According to some of our most recent writers, it is still a question just why the conditions described should be such potent factors in producing laryngeal inflammation. That they do is no longer a question of doubt, but whether it is by continuity of tissue or otherwise is not definitely determined. Still, it is a pretty well-established fact that laryngeal pathological conditions do not arise from extension by continuity, but rather by the quality and quantity of improperly prepared air. The causes are, then, purely mechanical, and come under the head of what might properly be termed traumatic inflammatory laryngitis.

It requires no great amount of nasal obstruction to force one to breathe through the mouth, especially during sleep, and any degree of mouth breathing means just so much less of moisture and warmth. That mouth breathing is a wholly abnormal method is strikingly illustrated in nursing babies having naso-pharyngeal obstruction.

In February last I was called to see a five-months-old baby. It had the appearance of a sufferer from marasmus, being intensely emaciated and lacking nourishment in every tissue. The breast was taken with great difficulty. It had been, by the advice of several physicians, rubbed from the time of its birth with cod-liver oil; and different tonics and tissue builders had been administered without benefit. The child was very restless during sleep, frequently giving short spasmodic "snorts" and doing the same during nursing. I found a large mass of hypertrophied lymphoid tissue filling the pharyngeal vault which I removed on the same day. The child was given the breast to quiet its crying, and for the first time in its life nursed continuously for about five minutes and fell into a quiet and peaceful sleep. The hæmorrhage was not severe. The improvement has been rapid from that time, there having been a gain in weight from sixteen to twenty-two pounds in the short space of four months. This child would not breathe through its mouth until compelled to do so to prevent asphyxia.

They soon learn, however, to become mouth breathers, and the local damage to the structures begins. To summarize the foregoing I mean simply this: That a chronic catarrhal laryngitis, or the conditions for producing it, may exist from birth to death, not as a disease *per se*, but as a result of changes and abnormities in the respiratory tract above, and that the conditions are favorable for the production of laryngeal inflammation whether the tissues above be in a state of active or passive congestion accompanied by hypertrophy or otherwise, or whether it has passed on to the later stage of shrinkage or even of atrophy.

In ordinary cases of catarrhal inflammation the morbid changes which take place in the mucous membrane of the larynx are not of special interest. In one of more marked severity we have an unusual activity of the normal nutritive processes shown by an increase of cell proliferation and consequent increase of secretion, together with a permanent dilatation of the blood-vessels. Hyperplastic changes supervene, the mucosa becomes thickened through the influence of the inflammation, and connective-tissue changes take place. These are seen most frequently in the arytænoid commissure and the ventricular bands. The cords become vascular but rarely hyperplastic, although I consider that tissue of somewhat different elements may very easily be added. The epiglottis may take part in these changes.

It is interesting to note that so close a student as Bosworth states that "it is the lymphatic bodies that are the seat of morbid action rather than the secreting glands. Hence, where we have evidences in the larynx of lymphatic enlargements I think this should be regarded as the local manifestation of a faulty systemic condition." Thus it is that in that class of subjects which are liable to lymphatic enlargements, the seat of disease may be reached as much by systemic means as by the removal of mechanical causes. Through the influence of lymphatic circulation the secretions throughout the body become perverted and abnormal in quality, and the lymphatic tissues in this region suffer in common with other lymphatic structures.

Many cases present themselves to us which, upon laryngoscopic inspection, appear to be cases of chronic inflammation which rapidly get better by a little derivative constitutional treatment and clear up at once unassisted by local means. I should therefore hesitate in many cases to pronounce them chronic until I had determined the fact by their unresisting tendency under general treatment. In fact, the diagnosis is to be made on account of the general systemic condition rather than solely upon local appearances. That inflammation of the mucous membrane of the larynx may occur due to purely local causes, such as the inhalation of irritating vapors is, as before stated, granted, but it is not my intention to deal with them particularly in this paper.

I will touch only in a summary way upon treatment. In Pepper's *System of Medicine*, Dr. J. Solis Cohen says: "'The accessibility of the interior of the larynx to instrumental manipulation under laryngoscopic guidance offers great temptations for topical interference. The result is that the diseased larynx is sometimes submitted to unnecessary and even injurious direct attack at the hands of a dexterous manipulator untrained in general practice, and consequently ignorant of the beneficial influence of purely constitutional measures upon many local morbid conditions.'"

These patients generally come to us during acute exacerbations of the inflammation. Among the many drugs commonly used I would call attention to the revival of what may be termed the older use of calomel, by means of which a quick relief of the lymphatic structures may be obtained. I would give from five to ten grains with an equal amount of sodium bicarbonate, followed in two or three hours by a saline purgative if necessary. This prepares the way for the so-called constitutional alteratives, of which the iodide of potassium is the type. Doses of one or two grains thrice daily, continued indefinitely, but especially while the patient is under local treatment, are wonderfully potent in reducing the inflammation. I was much pleased at the last meeting of the laryngological section of the New York Academy of Medicine, to hear a paper by Dr. C. C. Rice on the action of iodide of potassium on hypertrophic conditions of the larynx, in which he advocated its use not so much because of a suspected syphilitic element, but on account of its alterative action on the glandular structures. Other means of general treatment I will not mention, and I refer to these merely to establish the principle.

Local treatment should consist in thorough attention to cleanliness of the whole of the upper air tract by neutralizing washes. I insist upon cleanliness of the *whole* of the accessible respiratory tract on the same principles which I have been considering.

I will not go into particular mention of such valuable local remedies as menthol, salol, eucalyptol, and others of their class, except to say that I have found them most valuable when prepared in the hydrocarbon oils and when vaporized. The addition of gum benzoin to the oils, as in the benzoinal preparations, makes a very soothing application. Absorption takes place readily with these oils, and as protectives they are very serviceable.

I referred above to a period of transition during the pathological process, when degeneration of tissue occurs and a succeeding period of dryness supervenes. Any overtaxed glandular structure becomes in time hampered in its activity, and if the mucosa proper does not undergo the same change, it is bound to suffer from the changes which have taken place in the structures above. Naturally, the proper course of procedure up to this time will have been directed toward removing apparent causes for relief of the nasal, naso-pharyngeal, or pharyngeal stenosis and obstructions; but the condition now referred to should be borne in mind during the operative work which may be required. I called attention to this particularly in an article on Suggestions on the Use of the Galvano-cautery for the Reduction of Hypertrophies of the Turbinated Bodies, published in the *Manhattan Eye and Ear Hospital Reports* for 1894. We are tempted to do too much while endeavoring to remove remote causes of laryngeal inflammation, and if not careful we bring about a condition worse than the first.

Whether atrophy is only an advanced condition to one of hypertrophy, or whether it is the result of first, a desquamative inflammation of the nasal mucous membranes, followed by purulent rhinitis, which gives place to glandular atrophy, it is not within the scope of this paper to discuss, but that a succeeding condition of dryness follows the overwork of the previously hypertrophied structures is a clinical fact. As dryness is a secondary, we might say tertiary stage of overgrowth and polypoid degeneration, so the pharynx and larynx suffer accordingly. Bosworth says: "It is doubtful if a simple, uncomplicated chronic laryngitis is ever a primary disease. Certainly, he says, no case has come under my observation in which the development of the morbid process could not be traced directly to some diseased condition of the air passages above." He refers, in this way, to the primary conditions, not because of excessive secretions so much as perverted respiration. If such be the case how much more will the larynx suffer from the breathing of dry and ozæna-contaminated air?

We have, of necessity, following all the conditions of pharyngitis and laryngitis sicca which make the case most distressing. We are prepared to say that the larynx suffers from a late stage of inflammation from the inhalation of air deprived of the moisture of the upper air tract more than from all other local causes combined. It is an every-day clinical experience that we see cases combining the old chronic catarrhal inflammation with that of dryness, ozæna, and atrophy of the nasal and pharyngeal membranes. Here again, the larynx does not become a "sicca" by continuity of tissue, but by the traumatism caused by the unmoistened and vitiated air. Here also, we have systemic conditions to deal with—such as abnormal inactivity of glands, anæmia, various neurasthenias, etc. These cases do better and improve more rapidly under careful attention to hygienic surroundings, hepatic and general stimulants, and tonics. It is a noteworthy clinical fact that many of these cases resort to alcoholic stimulants: a proof, to my mind, that there is a lack of proper tone in the system at large. Alcohol has been mentioned as a cause, but we also observe that the alcoholic habit is not often indulged in primarily, but only after a long period of depression. Neither do I hold that the general lack of tone is the result of the local condition, but rather one of the causes of the failure of the structures to perform their proper function.

Locally, treatment for the relief of the dryness seemed to be of little avail up to about four years ago. We began using ichthyol at the Manhattan Eye and Ear Hospital in solutions of keroline (five per cent.) giving the patient a spray of one per cent. to use at home, and the result was encouraging. We made it stronger, and finally used the pure drug freely, giving the patient an ointment of any desired strength—generally about twenty per cent.—with better results, until now we are prepared to show many cases of complete arrest of the atrophic process and a very comfortable degree of moisture. I have been using of late a stable aqueous solution of ichthyol of any strength up to fifty per cent. made with the aid of sodium salicylate and sodium bicarbonate. This preparation gives more relief to many patients than the pure drug, I think, because it is more readily absorbed.

I would not leave the subject without referring to the chronic laryngitis so prevalent among singers. It has been my fortune to deal with many of these, and aside from the direct injury done to the cords and to the mucosa by an improper use of the voice, I am prepared to say that this injury does not so necessarily occur in those cases in which the causes already mentioned are not present. Singers' nodes or chorditis tuberosa occur much more readily in the class of cases mentioned, and aside from complete rest of the voice or the correct use of it, the removal of the hypertrophic causes above, or of an existing nasal dryness is the most rapid means of correcting the difficulty. In singers nasal and naso-pharyngeal resonance is an absolute necessity, as is also moist inspired air. When these objects are attained very little treatment of the larynx is required.

I have mentioned anæmia as a coincident condition of the dry stage, and I would call attention to a very common and almost universal cause having to do with heating and ventilation. I could report cases by the dozen in which steam heat is a direct ætiological factor. That excessive dryness of the air is not a necessity of steam heat I am aware, but that such is the case almost universally is true. These cases respond quickly to tonics, outdoor exercise, and moisture in the living apartments. When we remember that an ordinary house furnace will evaporate from its water pan about six gallons of water per day with much comfort to the inmates, we can readily see how much is required for the normal necessities of the air passages.

It is not my intention to weary you with case reporting, but it would be a pleasure to give you reports of many cases where local treatment gave only temporary relief but not permanent benefit until hepatic and general glandular stimulants were used, constipation relieved, and the best of sanitary and hygienic surroundings obtained.

117 West Ninety-third Street.

FURTHER OBSERVATIONS ON THE SEMINAL CELLS.

By WILLIAM MOSER, M. D.

That the seminal fluid is rich in phosphates may be inferred from the number of phosphate crystals contained therein. The peculiar odor of semen is probably due to phosphates, rather than inherent in the Charcot crystal, as some writers would have us believe. The addition of ammonium phosphate to the seminal (or prostatic) fluid will cause quite a number of Charcot crystals to be precipitated. But in fresh or dried specimens they are not always demonstrable. Crystals are sometimes seen resembling sodium urate, and crystals resembling Charcot's, but from three to four times as large.* The spermatozooid consists of a head, corresponding to the nucleus of the cell (*vide* article in *N. Y. Med. Jour.*, July 6, 1895), a middle piece, and a tail, formed from the protoplasm of the cell. The head or nucleus is round and contains a nucleolus. During life, the nucleus, owing to contractions inherent in it, becomes pear-shaped or narrow. These differences in shape have been regarded as differences dependent upon the manner in which the nucleus or head is viewed rather than upon inherent contractions. If the head remained as an inert body it would have to be propelled by the tail, and of this we have no proof.

The nucleus of the round epithelial seminal cell may divide many times, no division of the cell body taking place. According to Kölliker, these cells usually make their appearance at the age of puberty. Now and then such a cell may be seen in the seminal fluid. "In these cells the spermatozoa are formed; their number corresponding usually with that of the cell nuclei. They are developed in bundles, held together by the membranous envelope surrounding them, but are afterward set free by the liquefaction of the cell wall, and mingled with a small quantity of transparent fluid" (Kölliker, Dalton's *Physiology*, p. 594). They may leave the cell singly or in shoals. But, as previously described (*N. Y. Med. Jour.*, July 6, 1895), the uninucleated cell of the seminiferous tubes may also be transformed into spermatozooids.* I have noted small, round bodies, sometimes single, sometimes double, attached to the middle piece. I am in doubt as to the nature of these bodies. If they are foreign particles which have accidentally become attached to this cell, it is strange that they should show such a predilection for the middle piece.

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* Leucine spheres occur in old, dried specimens.

It not infrequently happens that two or three spermatozooids become fused together. When this fusion takes place, the cells rarely ever separate, but act and move in the field as one cell, and may be mistaken for a cell containing two or three cilia, when in reality they are merely two or three nuclei fused together. Now the tendency of these nuclei to unite, and the manner in which they remain united, leads me to advance the theory that we have here another explanation in the causation of twins and triplets.† The head or nucleus of the spermatozooid is markedly chromatic and imbibes methyl blue very readily, while the tail does not. When the spermatozooids have ceased to move, and if the specimen be carefully stained with methyl blue, we can determine whether we are dealing with only one nucleus with two cilia or with two nuclei fused together. Admitting the frequency of this fusion, and the difficulty at times of determining whether we are dealing with two cells intimately joined or with one cell with two cilia, the writer believes he has seen an instance of the latter anomaly. H. Gibbes reports having seen a cell in which a spiral thread was attached to the middle piece and terminated as the tail. As the spermatozooids show motion outside the body, they may, as was pointed out by Hofmann, retain motion some time after the death of man.

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158 Ross Street.

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* Dr. McNamara, of the house staff, draws my attention to contractions occurring in quite a number of cells when the specimen is examined fresh, even without the warm stage. In this way I have seen a spermatozooid by a series of quick, successive movements again become a round cell with the head or nucleus in the centre.

† The fusion of two cells is frequent, that of three less so, while rarely four or even five become united. The fusion takes place at the head or nucleus, and they act as one cell. I fear these factors have not been sufficiently considered in explaining the origin of multiple pregnancies. Large numbers of round organisms may be seen in fluid exposed to the air only for a short time.

A CASE OF
ABSOLUTE BLINDNESS (AMBLYOPIA) FROM ANOPSIA,

FOLLOWED BY RECOVERY.

By A. SCHIRMAN, M. D.

The following case, which I desire to report on account of its great rarity, came under my observation at the Ophthalmic Hospital in St. Petersburg in 1888. It is very instructive and interesting from a physiological point of view, and has, in my opinion, a physio-biological significance.

A. G., a farmer, fifty-one years of age, was sent to the hospital for examination, and upon inquiry it was found that in the second year of his age he had had an attack of small-pox which had affected both eyes. The sight of the left eye was completely destroyed (phthisis bulbi oculi sinistri), but in the right eye there was, in a very small degree, sensitiveness to sunlight, probably due to the warmth. In the left eye there was a cavity in place of the eyeball. In the right eye there was a perceptible opacity of a white color, and imbedded in the junction between the iris and the cornea (adherent leucoma). A little below the centre there was a large corneal spot, to the central margin of which the iris closely adhered. The vision was naught. $V. = \frac{1}{\infty}$. The patient could not see the doctor's hand at all. As there was apparently nothing to be lost by an operation, iridectomy was performed, more especially for its cosmetic value than for any optical purpose. The lower transparent margin of the iris was cut off, and blood and a watery humor from the anterior chamber covered the incision; but this was soon absorbed. The crystalline lens and its capsule appeared to be clear, and this transparency was distinguished afterward by focal and ophthalmological examination. At this time the remarkable discovery was made that the retina and the optic nerve had not lost their function, although the patient had apparently been absolutely blind for nearly fifty years. On the day following the operation the patient was able to see my hand at a distance of half a metre, and on the third day he could see at a distance of four metres, and with the aid of glasses his vision gradually improved so that he was able to measure distances, recognize persons, and distinguish surrounding objects. During these years of blindness his mental development had been almost at a standstill; he was almost childish in his actions, although soon after the restoration of his sight his intellectual faculties began to develop, but so slowly that it required a very long time for him to become familiarized with the objects around him. In this case we may exclude, as the cause of blindness, strabismus, poisoning, alcoholism, diabetes, syphilis, excessive use of tobacco, etc.

A case similar to mine, so far as I can remember, has been cited by Dr. Mackenzie in the *Lancet* for 1888. The patient, who was sixty-three years old, became blind when he was two years old after an attack of small pox. The left eye was completely destroyed, a fossa orbitalis being in the place of the bulbus oculi. There was no sight in the right eye, and in the corneal surface a dense opacity was noticed, with the border of which the iris was drawn into close contact. Dr. Mackenzie performed iridectomy from above, corresponding to the transparent part of the cornea. A year after the operation an examination was made and the cornea opposite the incision was found to be dim, and the movement of the eye was not free in every direction. But the patient could walk without assistance, could distinguish objects, measure distances correctly, and could distinguish even the tints of flowers.

Another case came under Professor Pflüger's observation at Berlin in 1885. The patient, a boy fifteen years old, had been blind from his birth. An examination showed that the nervous sight apparatus was normal and that there were no other impediments. Professor Pflüger performed an operation, and after the removal of the bandages the patient was able to see. For some time he was unable to appreciate surrounding objects and new impressions were a constant source of fatigue. Undoubtedly, there was here also an opportunity for interesting physiological observations.

In the histories of these cases we can appreciate the so-called *lusus naturæ*. There are many physiological phenomena not yet fully explained by science, and the investigation of obscure questions by scientists to bring about discoveries of practical value is worthy of the profession's attention. If my article will arouse my colleagues to increased vigilance in the investigation among those who have been blind for many years, with successful results, the aim of this communication will have been attained.

As blindness is often the result of ophthalmia in infants, it would be well to introduce a bill in the Legislature making it compulsory on parents, nurses, and midwives to report to the proper person all cases of ophthalmia coming under their notice, under penalty of the law.

117 Madison Street.

The Woman's Medical Journal.—In the August issue of the *Woman's Medical Journal*, published in Toledo, Ohio, there is begun a series of illustrated biographical sketches of the leading women of the medical profession. Those included in the August issue are Dr. Marie Zakrzewska, of Boston, who was one of the earliest graduates; Dr. Eliza Burnside, of Philadelphia, another pioneer woman; and Dr. Mary Spink, of Indianapolis, a representative of the younger women of the profession.

The British Gynæcological Journal.—An American edition of this excellent journal was begun in May. It is published in New York. The editor modestly says: "We trust our American brethren who do not belong to the society [the *Journal* is the organ of the British Gynæcological Society] may appreciate our *Journal* as highly as we do some of theirs."

The Richmond Academy of Medicine and Surgery.—The subject for discussion at the next meeting, on Tuesday evening, the 13th inst., is the Diagnosis and Medical Treatment of Cholelithiasis. The discussion is to be opened by Dr. Edwards and Dr. Irving.

A Letter signed "A Subscriber of Baltimore" has been received by us. It seems to have been intended for publication, but we can not publish it without knowing the writer's name, and under no circumstances can we publish that part of it in which persons are mentioned by name as charlatans.

Changes of Address.—Dr. J. Herbert Claiborne, Jr., to No. 39 West Thirty-sixth Street, New York; Dr. W. J. Doyle, to No. 2407 Showaker Street, Philadelphia; Dr. Robert Safford Newton, to No. 19 East Forty-fourth Street, New York.

THE
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RESUSCITANDUS EST *INDEX MEDICUS*.

It is very gratifying to discern indications that the *Index Medicus* is to be re-established. If it is, the credit will be due in great measure to Dr. Sajous, who took the initiative in an enterprise to enlist two hundred subscribers of twenty-five dollars each for the purpose. Dr. Sajous did this journal the honor to make it the medium by which his generous undertaking was made known to the profession, and through the same medium Dr. Jacobi offered to double his subscription, already large. Now, as we go to press with this issue, comes a note from Dr. Frederick Holme Wiggin saying that he will be glad to be one of Dr. Sajous's two hundred. It seems to us that the profession only needs to be made to realize that whatever is done must be done quickly. Let us revive the *Index Medicus* speedily. It is true that enterprises in the interest of the general welfare are apt to go on but sluggishly in the dead of summer, but this season of inertia is but the calm that goes before the vigorous autumnal revival that soon spreads from commercial affairs to literary and artistic ventures. Among the desirable achievements that the coming autumn is sure to witness let the resuscitation of the *Index Medicus* be one of the foremost; our national pride, if nothing else, demands it. There is nowhere in all the world, and there never has been, anything of the sort approaching it in value. We Americans created it; let us sustain it. Foreign aid may be had to some extent, and certainly should not be spurned, for the success of the resuscitated journal calls for all the resources that can be made available; but we in the United States should feel the incentive to the greatest degree.

The interest felt abroad in the matter is well shown by recent editorial articles in the two great London medical weeklies. In the *Lancet* for July 27th we find the following: "In our issue of June 29th we pointed out how important a matter it was that the *Index Medicus* should not be allowed to perish. The yearly cost of production is about £1,000, and it is proposed to raise this sum by 200 subscriptions of £5 each. The United States, it is estimated, will supply 120, Great Britain 60, and the Continent 20. We think, however, that Great Britain, with all her learned societies, might well subscribe £400 by herself. If £5 is too heavy a tax for one individual to undertake, there are surely five medical men in every one of our large towns, each of whom would subscribe £1, and so form a group which would receive a copy of the *Index* for their common use; while institutions and societies should have no hesitation in voting the required amount."

The *British Medical Journal* of the same date says: "As will be seen by the correspondence between Mr. MacAlister, the librarian of the Royal Medical and Chirurgical Society, and Dr. Billings, the librarian of the surgeon general's office at Washington, a determined effort is to be made to resume the publication of the *Index Medicus*. Of the value of this publication to all engaged in the study and interested in the advancement of medicine and the ancillary sciences we have spoken recently. It is a guiding thread which leads the inquirer through the mazes of the literature of modern medicine. Without it, or some such guide, the attempt to find a reference, when the subject or author only is known, is almost as hopeless as looking for a needle in a bottle of hay. The subscription proposed is, it must be admitted, very high, but the production of such a serial is extremely costly, and there ought to be a sufficient number of libraries and societies alone in this country to supply a large proportion of the sixty subscribers required from us. The margin might probably be made up, as Mr. MacAlister suggests, by groups of medical men formed for the purpose of obtaining a copy in common. The suggestion to issue the *Index Medicus* in future quarterly instead of monthly will, we believe, meet with general approval, inasmuch as the value of the work would not be diminished to an appreciable extent by such an alteration."

We feel sure that the medical profession of America, while not inclined to decline the co-operation of European brethren, will feel particularly constrained to do its best in this public-spirited undertaking. Let the contention be as to who shall be first to follow the example of Dr. Sajous, Dr. Jacobi, and Dr. Wiggin. *Resuscitandus est Index Medicus!*

MINOR PARAGRAPHS.

THE UNIVERSITY OF SYRACUSE.

The *Syracuse Post* announces that a new building is soon to be erected for the medical school of the university, and publishes a description of the structure illustrated with cuts showing the front elevation and the ground plans. It is added that the school is likely to lengthen its course to four years soon. We congratulate the faculty on this evidence of the appreciation in which their work is held by the people of Syracuse, upon whom mainly it has fallen to subscribe the money necessary to warrant this new undertaking. "In one sense," says the *Post*, "it is a local enterprise, for it is a prominent feature of Syracuse life and will always be a commercial factor, as well as an educational feature, in the growth and prosperity of the city. But in a broader sense the new medical college is an institution for the whole State of New York."

QUACK MEDICINES.

In an editorial article inspired by the death of a boy in consequence of taking a quack medicine under coercion by his parents, the *Brooklyn Daily Eagle* says: "The prohibitionists want us to devote some months of time in the public schools to a study of the effects of alcohol on the human system—a subject that can be mastered in ten seconds by the exhibition of a certain kind of New Yorker on Saturday night. Far better, if any such study is deemed necessary in a school course, to have the longest chapter in the text-book devoted to the silliness of self-dosing. The cures worked by patent nostrums are faith cures, and faith at two or three dollars a bottle is needlessly expensive. Better make it a bottle of something that has comfort in it, instead of mystery and pigweed and bitterness and ignorance and disgust."

NEWSPAPER MEDICINE AGAIN.

A correspondent has sent us a newspaper clipping giving an account of an autopsy. The account says of the deceased that "his death was caused by scenosis of the aorta, heroma of all the veins of the body, especially those of the brain. There were also inflammatory signs of meneges of the brain."

A NEW CALIFORNIA JOURNAL.

We have received the first number of the *Los Angeles Polyclinic*, a monthly journal edited by Dr. J. F. T. Jenkins. The nature and the arrangement of its contents give promise that it will deserve success.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 6, 1895:

DISEASES.	Week ending July 30.		Week ending Aug. 6.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	12	2	35	3
Scarlet fever	39	6	25	0
Cerebro-spinal meningitis	3	1	0	0
Measles	108	16	166	12
Diphtheria	160	33	178	16
Small-pox	0	0	0	0
Tuberculosis	124	124	97	108

The American Association of Obstetricians and Gynæcologists.—The eighth annual meeting will be held in Chicago on September 24th, 25th, and 26th, under the presidency of Dr. J. Henry Carstens, of Detroit. The preliminary programme includes the following papers: The President's Address, by Dr. J. Henry Carstens; The Relation of Pelvic Suppuration to Structural Changes that may Occur in the Falloppian Tubes, by Dr. A. P. Clark, of Cambridge; Nephrorrhaphies, by Dr. George Ben Johnston, of Richmond; Detached Fibroids, by Dr. George H. Rohé, of Catonsville, Md.; A Clinical Contribution to Lateral Displacements of the Uterus, by Dr. Edward J. Ill, of Newark; Appendicitis, by Dr. A. Vander Veer, of Albany; The Intermediate Treatment of Puerperal Sepsis, by Dr. A. B. Miller, of Syracuse, N. Y.; Kraurosis Vulvæ—a Contribution to its Pathology and Therapeutics, by Dr. H. W. Longyear, of Detroit; A Report of Three Recent Cases in Gall-bladder Surgery, by Dr. Edwin Ricketts, of Cincinnati; Intestinal Obstruction following Peritoneal Operations, by Dr. A. H. Cordier, of Kansas City; The Cure of Tubal Distention without Laparotomy, by Dr. F. A. Glasgow, of St. Louis; Hysterectomy in Bilateral Diseases of the Appendages, giving Remote Results, by Dr. Florian Krug, of New York; An Exhibition of Various Types of Rectal Papillæ, by Dr. R. T. Morris, of New York; Ruptured Interstitial Pregnancy, by Dr. L. H. Dunning, of Indianapolis; Has Gynæcology received Just Recognition as a Specialty? by Dr. M. B. Ward, of Topeka, Kan.; Indications for Operation in Puerperal Sepsis, by Dr. L. S. McMurtry, of St. Louis;

and Pneumoperitonæum, by Dr. James F. W. Ross, of Toronto. Papers will be read also by Dr. H. E. Hayd, of Buffalo; Dr. S. Y. Howell, of Buffalo; Dr. W. B. Dorsett, of St. Louis; Dr. C. C. Frederick, of Buffalo; Dr. J. B. Murphy, of Chicago; Dr. Charles A. L. Reed, of Cincinnati; and Dr. M. Rosenwasser, of Cleveland. There will be a discussion on Vaginal Hysterectomy *versus* Abdominal Section for Pus Tubes, by Dr. X. O. Werder, of Pittsburgh, Dr. Reuben Peterson, of Grand Rapids, Mich., Dr. Joseph Price, of Philadelphia, and Dr. George H. Rohé, of Catonsville, Md.; also one on Eclampsia Gravidarum, by Dr. Frederick Blume, of Allegheny, Pa., Dr. George F. Hulbert, of St. Louis, Dr. W. H. Taylor, of Cincinnati, Dr. H. W. Longyear, of Detroit, Dr. J. M. Duff, of Pittsburgh, Dr. A. H. Wright, of Toronto, Dr. Thomas Lothrop, of Buffalo, and Dr. W. P. Manton, of Detroit.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 21 to August 3, 1895:*

Porter, Alexander S., First Lieutenant and Assistant Surgeon. The extension of leave of absence granted him on account of sickness is further extended two months.

Powell, Junius L., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month.

Winne, C. K., Major and Surgeon. The leave of absence for seven days granted him is hereby extended twenty-three days.

Carter, W. Fitzhugh, Captain and Assistant Surgeon, is granted leave of absence for one month.

Marine-Hospital Service.—*Official List of the Changes of Station and Duties of Medical Officers of the United States Marine-Hospital Service, for the fifteen days ending July 31, 1895:*

Hutton, W. H. H., Surgeon. To proceed from Washington, D. C., to Pensacola, Fla., on special duty. July 18, 1895.

Hamilton, J. B., Surgeon. Granted leave of absence for three days. July 30, 1895.

Wheeler, W. A., Surgeon. Detailed as chairman of board for physical examination of candidate for Revenue-Cutter Service. July 23, 1895.

Carmichael, D. A., Passed Assistant Surgeon. Detailed to make physical examination of candidate for Revenue-Cutter Service. July 26, 1895.

Williams, L. L., Passed Assistant Surgeon. Granted leave of absence for ten days. July 20, 1895.

Magruder, G. M., Passed Assistant Surgeon. To proceed from Galveston, Texas, to New Orleans, La., for temporary duty. July 27, 1895. Order to proceed to New Orleans suspended, and directed to proceed to Eagle Pass, Texas, for special duty. July 31, 1895.

Perry, J. C., Passed Assistant Surgeon. Granted leave of absence for twenty days. July 16, 1895.

Sprague, E. H., Assistant Surgeon. To proceed from Mobile, Ala., to Key West, Fla., for temporary duty, upon completion of which to rejoin station at Mobile. July 18, 1895.

Thomas, A. R., Assistant Surgeon. To proceed from Buffalo, N. Y., to New Orleans, La., for temporary duty. July 20, 1895.

Cummings, H. S., Assistant Surgeon. Detailed as recorder of board for physical examination of candidate for Revenue-Cutter Service. July 23, 1895.

Greene, J. B., Assistant Surgeon. To report at bureau for temporary duty. July 16, 1895.

Society Meetings for the Coming Week:

Tuesday, *August 13th:* Richmond, Va., Academy of Medicine and Surgery.

Wednesday, *August 14th:* Medical Society of the County of Allegany (quarterly), N. Y.

Friday, *August 16th:* Brooklyn Medical Society.

Answers to Correspondents:

No. 437.—We understand that the book is out, but we have not yet seen it. From our knowledge of the author, we feel sure that it is excellent.

Births, Marriages, and Deaths.

Married.

Backus—Maynard.—In Rochester, on Wednesday, July 31st, Dr. Ogden Backus and Miss Harriet Maynard, of Utica.

Preston—Mahany.—In Buffalo, on Thursday, August 1st, Dr. John C. Preston and Miss May C. Mahany.

Robertson—Ainsworth.—In Pass Christian, Miss., on Wednesday, July 24th, Dr. Alexander R. Robertson and Miss Alice L. Ainsworth.

Died.

Betts.—In Red Bank, N. J., on Monday, August 5th, Dr. William A. Betts, aged sixty-one years.

Liddle.—In Brooklyn, on Thursday, August 1st, Dr. William A. Liddle, of Rockton, N. Y., in his twenty-eighth year.

Letters to the Editor.

THE CASE OF MRS. MAYBRICK.

Dublin, *July 20, 1895.*

To the Editor of the New York Medical Journal:

Sir: The case of Mrs. Maybrick possesses a good deal of interest for the members of the legal and medical professions at both sides of the Atlantic. It is, I believe, the only case in which a sentence of penal servitude for life has been passed and persisted in (notwithstanding all remonstrances) in the face of an acknowledgment that there is a reasonable doubt as to whether the man whom the accused was convicted of murdering did not die of natural causes. For six years the matter has now been in this position.

Since the trial further evidence of Mr. Maybrick's habit of arsenic-eating has been procured. It is evident that he did not take it merely for malarial fever while in America. He told Mr. Bancroft that he took it for longevity and fair complexion. He told Captain Fleming that what he was about to take in his food at lunch would suffice to kill the captain. He told Mr. Blake at Liverpool that he was an arsenic-eater, and compared his habit to De Quincey's opium-eating.

He had been complaining for a considerable time before his last illness, and even the date of the commencement of that illness can not be exactly fixed. The prosecutors at the trial dated it from April 27, 1889, but he continued to attend to his business at his office until May 3d. The prosecutors had previously adopted an earlier date. From May 3d until May 11th, when he died, he was confined to his bed. It was admitted on all hands that his symptoms up to May 3d were not in any sense distinctive of arsenical poisoning. He vomited on the morning of April 27th, but it would seem not afterward (except when his wife gave him an emetic of mustard and water on the 28th) until the evening of May 3d. He complained of constipation and was taking aperient medicine. He complained of a foul tongue (he had this for a long time, and it seems to have been combined with sweet breath), of distress about the chest and region of the heart, numbness, stiffness of the limbs, twitching, and an apprehension of paralysis. He had previously suffered from headache, but does not seem to have complained of pain in the eyes or intolerance of light.

After coming home on the evening of the 3d of May he vomited twice, and later on was seized with violent pains in his thighs, extending down to the knees. For this the doctor, after trying turpentine, administered a morphine suppository. Next day nothing would rest on his stomach. This sickness proved obstinate, though to a certain extent it yielded to treatment. A blister on the epigastrium on the night of the 6th seemed to have subdued it, but still the patient could take but little nourishment. On the 9th there were diarrhœa and tenesmus, but they also seem to have yielded to treatment. The patient was very restless, complained of a glazed throat, and his tongue became very foul. He died of exhaustion on the evening of the 11th.

The prisoner had been charged with poisoning him with arsenic as early as the 8th, but the charge rested entirely on the fact that she was unfaithful to her husband and had bought and steeped fly-papers. The doctors suspected nothing until the charge was made. They then examined the fæces and urine and found no arsenic, but Dr. Humphreys stated that the analysis was not a very careful one. After death a quantity of arsenic was found in the liver, which indicated about three tenths of a grain for that entire organ. A similar examination of the intestines indicated rather less than one tenth of a grain for the whole. There was also arsenic in the kidneys—evidently a small quantity, not exactly ascertained. None was found in the stomach or other organs examined, or in the contents of the stomach and intestines, or in the bile. The bedclothes and bedding were also examined to find if any had exuded through the skin. The result was in the negative. No trace of arsenic was found in the remains of anything that he had taken after being confined to bed on the night of the 3d, except that about the 6th Dr. Humphreys administered a little arsenic (Fowler's solution diluted), which he thought alleviated the symptoms. The patient, however, complained that it burned his throat, and his wife discontinued it.

On this state of things the following questions arise:

1. Was there more arsenic found in the man's body than might have been expected in a body of an habitual arsenic-eater whose supplies had been stopped seven or eight days before death?

2. Or was there *less* arsenic than we should have expected, thus showing that the evidence as to his habits of arsenic-eating is inaccurate or exaggerated?

3. Could the later symptoms—diarrhœa, tenesmus, and cardiac failing—have been caused by the stoppage of arsenic with an habitual arsenic-eater (as, of course, it must have been stopped when he was confined to bed, on the assumption that there was no intentional poisoning going on)?

4. Could death be reasonably attributed to excessive indulgence in arsenic as a stimulant, it appearing that he had procured a large stock of arsenic not long before?

A BARRISTER.

Book Notices.

System of Surgery. Edited by FREDERIC S. DENNIS, M. D., Professor of the Principles and Practice of Surgery, Bellevue Hospital Medical College, etc., assisted by JOHN S. BILLINGS, M. D., U. S. A., LL. D. Edin. and Harv., etc. Vol. I. The History of Surgery—Pathology—Bacteriology—Infections—Anæsthesia—Fractures and Dislocations—Operative Surgery. Profusely illustrated. Philadelphia: Lea Brothers & Co., 1895. Pp. 17 to 880.

THE selection of collaborators for the present system and the conscientious manner in which they have done their work are highly commendable. This volume begins with The History and Literature of Surgery, by Dr. John S. Billings, than whom we can imagine no one better fitted to write it. His long experience in the library of the surgeon general's office and his consequent intimate relations with the prominent men of this and the past generation peculiarly fit him for judging of their influence upon the progress of the art, and for writing a history that will be just to workers of the past and present. It is refreshing, after reading the modern English and German works, in which scarcely an American is mentioned as having influenced or advanced the development of our art, to turn to this brief but comprehensive history and learn how many bold and skillful surgeons this country has produced, and how many of the modern capital operations originated on this side of the Atlantic. Dr. Billings has done well to point out to the rising generation of doctors that they do not owe all their scientific attainments to our European brethren, and that original thought and bold and skillful work may develop in the mountains of West Virginia as well as in the vast hospitals of the Fatherland.

The next article is by Dr. W. T. Councilman, upon Surgical Pathology, including Inflammation and Repair of Wounds. The modern views of inflammation, ulceration, suppuration, hypertrophy, atrophy, degenerations, regenerations, and other pathological and reparative processes are brought out in a brief but comprehensive manner. The bacteriological element in these conditions is only slightly touched upon in this section, that portion of the work having been assigned to Dr. William H. Welch, whose fame in this line of research is world-wide and increasing. These two sections embrace all that is known in this branch that is of practical use to the surgeon, but they could be improved by more liberal illustrations. Good delineations of these morbid processes and their micro-organisms are more important to the student than cuts of bone forceps and of the sort of hole a rifle ball makes.

The sections on Septicæmia, Pyæmia, and Poisoned Wounds, by Dr. William H. Carmalt; Traumatic Fever, Erysipelas, and Tetanus, by Dr. J. Collins Warren; and Rabies, Hydrophobia, Lyssa, by Dr. Hermann M. Biggs, follow in the order named.

The section by Dr. P. S. Connor, on Gunshot Wounds, is a masterpiece. He has taken into consideration the great changes which have been made in modern guns of warfare, the decrease in the size of balls and increase in velocity, together with the influences antisepsis and asepsis have exerted upon the treatment of compound fractures and that of wounds of the abdominal organs, and has thus brought out what would be an excellent manual for military, naval, and emergency-hospital surgeons.

The succeeding article, on Fractures, is by Dr. Dennis, the editor of the *System.* His strong condemnation of hasty amputations in apparently hopeless compound fractures is worthy of the attention of all practitioners, especially railroad and corporation surgeons. In the treatment of these accidents, as much as in any other way, is the advance of modern surgery exemplified. He advocates the most rapid and radical interference to preserve a part, and the utmost conservatism in removing parts. Nature will do much to conserve her own if we only assist and protect her against infection and its consequent drains. Excellent as this article is, we must admit that thoroughness has been sacrificed for conciseness in some parts of it, for we notice the omission of several very useful and familiar means and methods in the treatment of certain fractures; indeed, an efficient method of treatment of fracture of the acromion process of the scapula, that of applying a broad adhesive strip passing from the elbow up over the fracture, and a second one to hold the arm immovable by the side, thus making the head of the humerus a fixed splint for the fractured process below while the plaster holds it firmly above, is omitted altogether; so also are Moore's and Pilcher's dressings for Colles's fracture, and Hodgen's admirable splint for fracture of the femur. No doubt just as good results can be obtained in most fractures by the methods advised, but there are cases in which the others are applicable, or at least more convenient, and in a work of this character we miss such old familiar faces, as it were. Dislocations are also treated of in this section in a most practical and thorough manner.

The section on Anæsthesia, by Dr. H. C. Wood, is one of those nicely adjusted scientific and practical works which we rarely see from the pens of laboratory experimenters. Realizing that after all the operating table is the place from which we must gather our practical knowledge of anæsthesia, he refuses assent to the conclusions of the Hyderabad commission as dominated by the laboratory experience of Dr. T. Lauder Brunton, and draws his conclusions from the experiences of the hundreds of thousands of anæsthetizations of human beings by practical surgeons and observant physicians. "We know of no true anæsthetic whose use is unaccompanied with danger," he says, and deprecates the vanity and conceit of those who report so many thousands of administrations without accident, as the result of their own peculiar methods and personal skill. Anæsthesia, whether from ether, from chloroform, or from any mixture, is a condition of danger, and the security of the patient lies in the recognition of this fact by the anæsthetist. Dr. Wood maintains that no condition of the heart is a positive contraindication to the use of an anæsthetic, but says that we should always bear in mind the one indisputable point with regard to ether and chloroform, that ether stimulates and chloroform depresses the circulation, and choose the one or the other with reference to the functional rather than organic condition of the heart. However harmless chloroform may be in hot climates, he states that in the total number of anæsthetizations it is shown to be more than four times as dangerous as ether, and should be used proportionally less often, as the safety of the patient, and not the saving of time or agreeableness, is the first consideration in every surgical procedure.

The volume closes with sections by Dr. A. G. Gerster, on the Technique of Antiseptic and Aseptic Surgery, and by Dr. Stephen Smith, on Operative Surgery. Dr. Gerster is too well known in this line for us to comment upon his work. His article is thorough, scientific, and full of practical suggestions. Dr. Smith's article follows largely the teachings of Treves's *Operative Surgery*, and is an excellent though brief *résumé* of the subject. The illustrations here are numerous and well executed.

As to a point in the arrangement of the work, it would seem that the consideration of anæsthesia, minor surgery, bandaging, and surgical appliances should logically precede that of gunshot wounds, fractures, and operative surgery, but no doubt the editor has good and sufficient reasons for the order he has given.

The mechanical part of the book is a credit to the publishers, and Dr. Dennis is to be congratulated upon the excellent appearance of his voluminous work.

Atlas of Clinical Medicine. By Byrom Bramwell, M.D., F.R.C.P. Edin., F.R.S. Edin., Assistant Physician to the Edinburgh Royal Infirmary, etc. Volume III. Part II. Edinburgh: T. & A. Constable, 1895. Pp. 49 to 96.

The earlier numbers of this great work have been reviewed in this journal as they have appeared from time to time. This part is fully equal to those which have preceded it, both in the illustrations and in the character of the literary work. The first subject considered is congenital syphilis. It is illustrated by four full-page plates, and is an unusually complete review of this important subject. The most interesting chapter is that on progressive muscular atrophy. The essential pathological lesion of the ordinary form of this condition the author believes to be a slow and gradual destruction of the multipolar nerve-cells of the anterior horn of the spinal cord. In many cases, the crossed pyramidal tracts are also sclerosed. The question has been much agitated of whether the lesion of the nerve-cells is degenerative or inflammatory in character. In the present state of our knowledge it is impossible to arrive at an absolute decision. In some cases subacute inflammatory disease is undoubtedly present, but this does not necessarily prove that the primary lesion of the nerve-cells is inflammatory. The author draws a remarkably clear and scientific picture of the disease, which leaves but little to be desired. The two full-page plates accompanying this portion of the work are unusually good. This is followed by an article on pseudo-hypertrophic paralysis. The number closes with a description of eight peculiar and more or less rare forms of muscular atrophy.

Early Scoliosis or Curable Curvatures of the Spine. By Percy G. Lewis, M.D., M.R.C.S., L.S.A., A.K.C., Honorary Medical Officer to the Victoria Hospital, etc. London: John Bale & Sons, 1895. Pp. 7 to 49.

In the difficult subject of the treatment of scoliosis all contributions are welcome, but the diversity of the methods recommended shows the unsettled state of our knowledge. Dr. Percy develops the weakened groups of muscles by systematic and carefully chosen exercises with the pulley weights, and combats the deformity by using an upright bolster fastened to the back of a chair on the side of the prominent shoulder. He deprecates the use of jackets.

Dissections Illustrated. A Graphic Handbook for Students of Human Anatomy. By C. Gordon Brodie, F.R.C.S., Late Senior Demonstrator of Anatomy, Middlesex Hospital Medical School, etc. With Plates Drawn and Lithographed by Percy Highley. In Four Parts. Part IV. The Abdomen. With Sixteen Colored Plates (two thirds natural size), two of which are double, and Thirteen Diagrams. London and New York: Whittaker & Co., 1895. Pp. 116 to 136. [Price, 10*s.*]

This last number of Mr. Brodie's excellent work is of great interest to genito-urinary, rectal, and gynæcological surgeons, as it deals with the abdominal, pelvic, and perineal organs. The section contains fifteen full-page colored plates, besides numerous woodcuts and the descriptive text.

The subjects are well selected and the dissections must have been beautifully done to produce such clear demonstrations as the artist has drawn. Some of the plates are so clear that they seem almost diagrammatic. As an aid to the study of anatomy we know of no superior plates, although a fuller descriptive text seems desirable.

Reports on the Progress of Medicine.

ORTHOPÆDIC SURGERY.

By HENRY LING TAYLOR, M. D.

Skeletal Variation.—In the Shattuck lecture, read before the Massachusetts Medical Society, June 12, 1894, Professor Thomas Dwight gives the results of original investigation into skeletal asymmetry and variation. From measurements in seventy-five subjects, of which more than two thirds were male, he found the right radius usually, the right humerus almost always, the longer; the average difference was six millimetres. Rollet found seven to eight millimetres difference in favor of the right in a hundred subjects, one half males. The femora differed by about two millimetres, that of one side predominating as often as that of the other; the tibiæ by three millimetres, the left being oftener the longer. The combined length of the femur and tibia is greater on the left side in more than half the cases, with an average excess of four to five millimetres. The author believes that it is not possible to predicate the shape or size of the bones from that of the body, or *vice versa*, with any great certainty. He believes that the main characteristics of each body are largely hereditary, and that mechanical explanations will not account for most of the structural peculiarities of bones. The vertebræ may be one short or one over in the dorsal or lumbar region.

Influence of Suspension upon the Circulation.—Dr. Joachimsthal, of Berlin, has investigated by means of sphygmographic tracings the effect of suspension upon the circulation in two series of cases (*Annales d'orthopédie*, October, 1894). The first group was composed of five scoliotics and three spondylitics without circulatory anomaly; the second group was made up of six individuals suffering from compensated valvular lesions, and one from profound anæmia, in addition to the spinal distortion. The author found that the frequency of the pulse was usually, but not always, increased by suspension; the exceptions were more frequent in the second group. The frequency of the pulse was diminished once in the first group and twice in the second. In four cardiac cases there was a change in the tracing indicating increased tension. There was no irregularity of the pulse after suspension. In a case of mitral stenosis, when the pulse was intermittent after climbing stairs, it became perfectly regular during suspension. The author concludes that suspension is not detrimental in cases with compensated cardiac lesions; others are to be carefully watched.

In his experience manual and mechanical corrective manipulations are never injurious in scoliotics with a cardiac lesion.

Retropharyngeal Abscess.—In an interesting paper (*Am. Med.-surg. Bull.*, April 15, 1894) on retropharyngeal abscess, Dr. W. R. Townsend quotes the statistics of Bokai, of Pesth, who saw two hundred and four cases between 1854 and 1880. Of these, a hundred and seventy-nine were idiopathic; seven were due to caries of the spine; nine developed after scarlatina; one, after measles; one, after trauma; and in seven the pus burrowed from other abscesses. In all cases the abscess should be promptly evacuated to avoid the danger of suffocation and hæmorrhage. An early diagnosis as to the source of the abscess is important, since in cases due to caries, the treatment of the primary disease by mechanical appliances and by recumbency is urgently indicated. In these cases the abscess should be opened from the neck either by a dissection through an incision along the posterior border of the sterno-mastoid (Chiene), or through an incision along the inner border of this muscle (Burckhardt). All other abscesses should be opened by aspirator, trocar, guarded bistoury, or finger-nail from the pharynx, taking care to make only a small opening at first. The head should hang over the edge of a table—Rose's position. Authorities differ as to the use of anæsthetics. Reverdin, of Geneva (*Annales d'orthopédie*, October, 1894), prefers the anterior incision, and makes the dissection with the finger. He reports three cases: one patient *in extremis* died of shock; another recovered from the operation, but died three months later of general tuberculosis; the third was doing well.

Pott's Paralysis.—Dr. J. H. Huddleston makes a study of a hundred and thirty-eight cases of Pott's paralysis (*Am. Jour. of the Med. Sci.*, August, 1894; abstract by Dr. Myers in *Am. Med.-surg. Bull.*, Oct. 15, 1894). He finds that the paralysis, though usually a paraplegia, may be a monoplegia or hemiplegia or brachial paraplegia, and these may afterward extend to involve both legs. Any part of the body supplied by spinal nerves may be involved. In nearly half the cases the paralysis occurred within a year after the onset of the disease, and usually attained its maximum within two months. It lasted from seven weeks to four years. If the disease is acute and the paralysis comes on early, the prognosis is worse than in the more chronic and advanced cases; the younger the patient the better the prognosis. Recovery may always be possible, no matter how severe the symptoms. The treatment should be by recumbency with spinal support and the evacuation of abscesses.

Prevention of Shortening after Hip Disease.—In a recent contribution (*Medico-surgical Bulletin*, Jan. 1, 1895) Dr. A. B. Judson reaffirms his conviction of the value of "symmetrical walking" in the prevention and correction of the adduction so common after hip disease. By "symmetrical walking" the author means walking in the normal rhythm, resting the weight of the body as long on one leg as on the other. He advocates careful drill in this method of walking until it becomes a permanent habit.

Arthrodesis.—The practice of ankylosing the knee and ankle in flail joints following infantile paralysis has not been extensively tried in this country. Robert Jones, of Liverpool, reports (*Provincial Med. Jour.*, December, 1894) fifteen cases in which he has ankylosed the knee or ankle, or both, by opening into the joint and peeling off the cartilage; the joint is then put up in a fixed dressing and protected with apparatus for a considerable time. In the knee, when firm ankylosis is desired, the bone is gouged; in the ankle, when a fibrous ankylosis is intended, it is sufficient to remove several grooved portions of the articulating cartilage. The author reports that in his twenty-six cases, including eleven not given in the table, healing was by first intention, and took place just as readily in those cases where trophic changes were marked as in the others. He has also observed that fractures in these blue, cold, atrophied limbs unite without appreciable delay.

Considerable improvement in the use of the limb was noted in nearly all the cases.

The author also practises a partial arthrodesis of the ankle from behind in talipes calcaneus in addition to shortening the tendo Achillis, which alone has proved unsatisfactory in his hands.

The technique of the operations for arthrodesis of the different joints is given by Professor Max Schüller, of Berlin, in his article in the *Real-Encyclopädie der gesammten Heilkunde*, 1894, together with a full discussion of the subject and a report of the literature.

The Bicycle in the Treatment of Flat-foot.—The bicycle as a machine for remedial exercise is now much spoken of. Brunelli, of Milan (Monograph, 1894), advocates its employment in the treatment of flat-foot, believing that it affords needed exercise to the most debilitated muscle groups controlling the ankle, with the foot in a favorable position and with superincumbent weight largely eliminated.

Sprained Ankle.—For obvious reasons it is not the writer's practice to include in this review papers that have already appeared in this journal, but Dr. Gibney's paper on sprained ankle (*N. Y. Med. Jour.*, Feb. 16, 1895) is so practical a help in treating this common but troublesome affection that it should be carefully studied by every practitioner. The treatment recommended is a system of strapping, after the swelling has been overcome by elevation and massage, and moderate use of the foot is permitted. The reader is referred to the article for details.

Excavation of the Astragalus for Inveterate Clubfoot.—In cases of inveterate clubfoot where excision of the astragalus has hitherto been required to reduce the deformity, Dr. T. Halsted Myers (*Am. Med.-surg. Bull.*, June 15, 1894) proposes that the astragalus be excavated by a small, sharp spoon through a half-inch incision, without opening any joint. When the foot is forced into position, the deformed astragalus is molded into conformity with the surrounding articulations. "If rotation on the vertical axis is still not completely overcome, a wedge can be curetted in the same way through a separate external excision from the neck of the os calcis or from the cuboid." The usual after-treatment follows.

Treatment of Congenital Dislocation of the Hip.—The treatment of congenital hip luxation is still attracting a good deal of attention and study. Dr. E. H. Bradford's conclusions (*Annals of Surgery*, August, 1894) are:

1. That the methods of treatment by traction or by mechanical means, with or without tenotomy, do not effect a cure.

2. That correction by forcible reduction without incision can be applicable in but few cases and is not reliable.

3. That the method of operative reduction offers the best prospect of a cure, though as at present practised it involves risks and is not certain in its results. The author looks for improvement in the operation, as there appear to be no insuperable obstacles in the way of a successful result. He considers that the shortened muscles about the hip and the shortened anterior bands of the capsular ligament form an important obstacle to complete reduction, that these fibres should be thoroughly divided, and that this can best be done through an anterior incision.

After a careful review of the different methods of treatment Dr. T. Halsted Myers (*Annals of Surgery*, August, 1894) concludes that Paci's method by manipulation is first to be tried at any age. If this does not succeed, injections of chloride of zinc and, if necessary, Hoffa's or Lorenz's operation may be performed, provided the child is not over ten. In a hundred and seventy-seven cases of Hoffa's operation and its modifications the direct mortality was six, or 3·3 per cent.

In old, deformed, and painful cases subtrochanteric osteotomy may be done. Dr. Myers has notes of a hundred and thirteen cases, in nearly one third of which pain was suffered at times. He reports very satisfactory improvement by traction, immobilization, and protection both in his own practice and in that of others.

Professor Lorenz reports (*Transactions of the Amer. Orthop. Assn.*, 1894, vol. vii) that up to the end of August, 1894, he had operated in ninety-nine cases of congenital dislocation through his anterior incision between the tensor fasciæ latæ and the sartorius without a single failure. He says that by means of preparatory extension it is possible to spare all the muscles acting upon the hip joint, even in the severest cases, with great shortening of the leg. At the Sixty-sixth Meeting of German Naturalists and Physicians, at Vienna, September, 1894, he presented thirty-four children that had been submitted to his operation. Their walking showed improvement in proportion to the time that had elapsed since the operation. Five who had had the operation on both sides walked with hardly a perceptible limp. All the patients walked gracefully and with an excellent carriage. He states that the aim of the operative treatment is not mere improvement, but to insure a complete recovery.

Professor Paci (*Revue d'orthopédie*, November, 1894) gives a detailed account of the post-mortem findings in the case of a girl of seven years who died of dysentery four months after the reduction of bilateral dislocation by his method. Two new joints were found sufficiently developed to guarantee the permanent stability of the femoral heads in a position below the anterior inferior spine of the ilium. Dr. Paci calls attention to the fact that even after the reduction, abnormities of the pelvis and femoral heads and necks still remain which, while they permit of a satisfactory result, do not admit of the restoration of perfect function.

Quick Method of removing Plaster Dressings.—At the time the bandage is applied Dr. Gigli (*Annales d'orthopédie*, February, 1895) places under it a string covered by a strip of parchment paper; the ends of this string are tied together outside. When the dressing is to be removed, this string serves to draw a fine wire saw beneath the plaster. This is directed with its cutting edge outward against the plaster, the ends are fastened in the handle of an ordinary chain saw, and the plaster is quickly sawed through from within outward.

Bending of the Femoral Neck in Adolescence.—This affection is very clearly described by Dr. Royal Whitman (*Trans. of the Am. Orthop. Assn.*, 1894, vol. vii), who reports four cases in boys from eleven to seventeen years of age in which limp, disability, or discomfort about the affected hip had been noticed only within a year or two. There was no evidence of rickets in these cases, but the femoral neck had yielded in a downward and backward direction from "a disproportion between the work to be performed and the strength of the supporting structure," as in flat-foot and knock-knee. The trochanter becomes elevated above Nélaton's line, the foot is everted, abduction and internal rotation are limited, and shortening of the limb is noticed. It comes on slowly during the period of rapid growth and inflammatory symptoms are absent.

The treatment consists in removing the cause, overwork, and improving the nutrition of the patient; if the trouble is unilateral, the long traction hip splint would seem to be indicated in the still progressive cases. Local massage and exercise and in advanced cases osteotomy of the femur below the trochanter, may be indicated to relieve the permanent adduction.

A case of bending of the femoral neck in a youth of seventeen has been reported (*Am. Medico-surg. Bulletin*, November 1, 1894) by Dr. B. F. Curtis. Pain in the knee had been noticed fifteen months before, and shortening of the limb, limping, and pain and stiffness at the hip had been observed for a month or two. Examination showed no marks of rhachitis. The limb was atrophied, slightly flexed, adducted, and considerably everted; the trochanter was prominent and about an inch above Nélaton's line. The motions at the hip joint were mostly limited; abduction and internal rotation nearly lost. Shortening, an inch and a half. The diagnosis of arthritis seemed probable, and the hip joint was opened as an exploratory measure. The joint was found healthy, but the neck of the femur was shortened and bent downward.

Dr. Curtis quotes Hofmeister, who has reported forty cases (*Beiträge zur klin. Chirurgie*, 1894, vol. xii), and who states that at the Tübingen clinic he has found nearly half as many cases of this deformity as of knock-knee.

Kirmisson considers (according to Myers, *Rev. d'orthopédie*, September, 1894) that the abnormal flexion of the femoral neck is due in some cases to a previous coxitis, osteomyelitis, or epiphyseal separation. The other cases may be associated with genu valgum and flat-foot, and may be rhachitic, or the deformity at the femoral neck may be the only symptom. The affection seems to be rare, considering the frequency of rickets.

Rickets.—Considerable attention has recently been given to rickets and allied disorders, one of the fruits of which has been the recognition of infantile scorbutus as a distinct affection. Dr. E. Chaumier (*Annales d'orthopédie*, September and October, 1894) gives his conclusions in regard to the nature of rickets as follows:

1. Rickets is a specific disease, produced by an unknown microbe.
2. It is contagious, endemic in cities, and sometimes epidemic.
3. This disease exists in young pigs in a spontaneous and epidemic state.
4. The germs of the disease appear to be preserved in houses; this preservation of the germs probably explains the so-called hereditary cases. As other infectious diseases may be inherited, the possibility of the inheritance of rickets may be admitted.

The four following papers were contributed to the discussion of rickets at the meeting of the American Orthopædic Association in Washington, May, 1894 (*Archives of Pædiatrics*, September and October, 1894): Professor A. Jacobi called attention to the fact that thirty years ago there was practically no rickets in this country, and that it was only with the accumulation here of poverty-stricken people from the slums of Europe that the disease had become common; so that the treatment of rickets was a social as well as a medical question. Professor Jacobi describes in detail the deformities due to the incompetence of the softened bones to resist the forces acting upon them. He emphasizes the fact that rickets is a constitutional disorder and that the muscles are soft as well as the bones, resulting in so-called pseudo-paralysis, dilatation of the stomach and intestines, and constipation. These children may be plump and heavy, but are flabby and anæmic.

According to Dr. Benjamin Lee, the essence of rickets is the failure to assimilate the earthy salts, especially the phosphate of calcium, and its principal manifestations are in the nervous and osseous tissues. Among the former are nervous irritability, convulsions, spasm of the larynx, and such vaso-motor disturbances as sweating of the head, bronchial catarrh, and enlargement of the arteries. Subsequently the trophic bone changes appear. Attention is called to the fact that in its incipiency rickets is frequently treated for gastro-enteric disorder, just as spinal caries has too often been, owing to the gastralgia. Any bottle-fed infant who suffers from constant indigestion and nervous irritability should be carefully examined for rickets, and the proper diagnosis should be made without waiting for bone lesions to develop. An early diagnosis is all the more important, as the several symptoms may often be prevented by appropriate treatment.

Dr. Samuel Ketch emphasizes the importance of the prevention of deformity by early attention to constitutional treatment and proper care and manipulation of the body. He regards as very important the avoidance of injurious positions during the stage of softening and tenderness. The child should not be encouraged to walk, but in many instances should be kept recumbent, with frequent changes of position, on a portative frame, so that the benefit of fresh air may be enjoyed. Proper bathing, diet, general hygiene, and change of air are of prime importance. Rhachitic deformities should be treated before the bones become hard by frequently repeated manual pressure, either with or without apparatus, which, if used, should be applied and controlled by the surgeon.

Professor De Forest Willard considers mechanical appliances efficacious in the treatment of rhachitic deformities, in bowing of the leg, and in- and out-knee before rigidity has occurred. In moderate grades of deformity immediate manual rectification may be successfully employed, but osteotomy he considers the operation *par excellence* for rhachitic deformities. The operation should be aseptic and practically subcutaneous, and the parts put up in a plaster dressing. The author does not like osteoclasis, and in cases in which straightening can not be accomplished by the hands over a wooden block he prefers to use the osteotome. He concludes as follows:

1. Simple out-bowing of the legs before the bones are solidified is easily corrected by pressure from a properly applied apparatus. Long out-bowing, accompanied by out-knee, may also be overcome by mechanical measures.
2. Forcible straightening over a solid fulcrum is often desirable, even if simple or green-stick fracture is produced, in a few cases where the parents can not, or will not, attend to the adjustment of apparatus.
3. Osteotomy is sometimes required in extreme cases of out-bowing in large children and in adults.
4. In anterior curvature it is rarely advisable to employ apparatus. Manual fracture over a hard fulcrum, or osteoclasis, or preferably osteotomy, is advisable. Cuneiform osteotomy is seldom necessary, except in extreme cases, as even a wide intervening gap may be filled up by callus, and the simple operation is less liable to be followed by suppuration.
5. For out-knee or in-knee osteoclasis is not desirable, but osteotomy above the condyle of the femur is safe, effective, and speedy. A secondary operation below the tibial tubercle is rarely required.
6. Curvature of the femur, unless greatly interfering with locomotion, does not require operation.

A case of congenital rickets is reported in detail (*Archives of Pædiatrics*, October, 1894) by Dr. C. W. Townsend. The mother admitted worry and privation during pregnancy, but labor was easy. The child weighed seven pounds, and had a large head in a condition of craniotabes. The extremities showed enlargement of the epiphyses, curvature of the long bones, and numerous fractures. The child died on the ninth day. Dr. Townsend has found records of but three cases of congenital rickets in this country.

In two hundred dispensary patients in Buffalo Dr. Snow found (*Medical News*, September 22, 1894) that of those of Neapolitan parentage seventy per cent. were rhachitic, though rickets is said to be rare in southern Italy; of the others, only twelve per cent. were rhachitic. The Italian parents were strong and healthy, and their life and surroundings no more unhygienic than those of the rest of the working population. Their infants were more frequently breast fed than the remainder of the dispensary class. Buffalo is colder, damper, and cloudier than Naples, and the Italian babies are housed there more than in Italy. Dr. Snow considers that the prevalence of rickets among Neapolitan babies in Buffalo indicates a constitutional deterioration from too great and sudden a change to an environment damper, less sunny, and less airy than that to which the race is accustomed.

Miscellany.

"**House-nerves,**" says the *Calcutta Medical Reporter*, "is the latest name invented by medical experts for the peculiarly depressing set of ailments which afflict people who stay indoors too much. The discovery of the novel malady is due to a journal devoted to science, and it is a mark of unusual and undoubted condescension that the name of the disease should be so simple and so easily understood. There was nothing, as far as can be seen, to prevent the scientific godfathers from naming their child 'Œkoganglia,' or something equally terrifying to the unsophisticated. Merely as 'house-nerves' we can regard the ailment with some complacency; but for all that it is not a thing to be laughed at. All over Europe the rush of existence is playing havoc with our sensitive cerebro-spinal fibres. We recognize all the symptoms which the inventors of 'house-nerves' describe as quite common in England to-day. They are 'low spirits and brooding,' much irritability, and a generally 'morbid habit' of mind. 'Women,' we read, 'especially women who are delicate and afraid to go out owing to the weather, are those who suffer most from this malady. They have a way of imagining that something awful is happening to their husbands or children when they are out of sight; they 'conjure up accidents, analyze their feelings, and lose their power of will.' All this occurs because people are too sedentary, and stay at home too constantly. Unfortunately, a houswife, as her name implies, is one whose duty is to stay at home for a considerable portion of each day; and all the mischief arises from her not being able to tear herself away from home ties and forget all about them in some form of out-of-door amusement or occupation. A woman who gets 'house-nerves' begins to study herself, her own wants and ailments and loneliness, to a painful extent, until—we are solemnly warned—she 'is on a fair road to an asylum, did she but know it.' Journals devoted to medical science often indulge in these pleasant little predictions; yet the reading public never accuse their editors of suffering from 'science-nerves.' Putting aside the hint of the asylum, as both alarmist and irrelevant, we have to admit that there is a great deal of truth in the idea that 'all home and no spree makes Jill a dull she.' Not only does it make her dull, but it often, in the humbler walks of life at any rate, gives rise to that 'nagging,' which drives husband to the public-house or deplorable personal violence. There may be happy lands—say Bœotia or the 'peasant-state' of Bulgaria—where nerves are unknown. Probably they affect the south of Europe less than the north, because there the climate allows of life being passed more in the open air, and sunshine and ozone are great nerve tonics. In Russia the consumption of tea, and Tolstoi leads inevitably to neurotic catastrophe. Nor is Europe the only sufferer. In no country in the world are human nerves exposed to greater wear and tear than in the United States. The combined effects of the negro question, unlimited candy, an addiction to rapid eating, iced drinks, and business hurry, are too powerful for any nerves not built of cast iron to withstand; and thus it comes about that the typical American is a neurotic patient long before he has attained to middle age. Fortunately, the disease is not left without a remedy, and the prescription for a person afflicted with 'house-nerves' is a very agreeable one. There is no help to be got from medicine or doctors. All that has to be done is to pay visits to others, to take long walks in the open air and sunshine, and to go in generally for gayety and innocent amusements. The patient is also recommended to 'repress every morbid thought, as it arises, or expel it by thinking of a necessary duty.' This advice is, perhaps, more easily given than followed. Hundreds of people would be only too delighted to repress morbid thoughts, but the more they try to repress them the more morbid do they become. It is sad to think that not only adults, but also 'imaginative children,' suffer from the 'domestic nerve,' and when such is the case they should be sent to 'play with merry companions,' whose merriment, let us hope, will be subdued enough to spare the 'house-nerves' of other people. Of course, there is nothing strikingly novel about the advice to try out-of-door exercise for morbid mental conditions; but these 'hints to those about to go into hysterics' will be of use if they help to impress on us the fact that a good deal of the excitability, the irritability, and the depression which afflict so many nowadays are really of the nature of a disease and should be treated with common-sense remedies, instead of useless reproaches."

Chronic Poisoning with Coffee.—At a recent meeting of the *Société médicale des hôpitaux*, a report of which is published in the *Gazette médicale de Paris* for July 20th, M. Gilles de la Tourette read a paper on this subject, in which he said that the symptoms due to chronic coffee poisoning should have special attention called to them, as very often they might give rise to errors in diagnosis which would be very prejudicial to patients. Chronic caffeism was nearly always confounded, he said, with alcoholic troubles, particularly with those affecting the digestive and nervous systems, for the two poisons produced effects which singularly resembled each other. Caffeic poisoning showed itself chiefly in digestive and in nervous troubles, the symptoms of caffeic dyspepsia very nearly resembling those of alcoholic gastritis, such as catarrhal gastritis, saburral tongue, a marked loss of appetite, etc. The distaste for solid food was such that the patients would eat nothing but bread soaked in coffee, and in this way the absorption of the poison was increased and became more and more marked. Nausea, vomiting, and acid eructations, which were sometimes very painful, supervened, and the patient became emaciated and fell into what M. Guelliot called caffeic cachexia.

The circulatory system was also influenced. Palpitation was rare, but a diminution of the pulse was especially observed. The nervous symptoms were frequent and were second in importance to the digestive troubles. There was insomnia, or, when the patient was able to sleep, there were dreams and terrible nightmares. Very frequently a decided trembling was noticed in the limbs, also a fibrillary trembling of the lips and of the tongue, which might become generalized in the other muscles of the face. Painful cramps of the thighs and of the legs might be observed, also troubles of the sensibility, which were not so marked in some patients. The reflexes generally remained unaffected.

Paralysis due to chronic coffee poisoning, said M. de la Tourette, had not yet been observed, but it was reasonable to suppose that chronic caffeism might produce paralysis. These different symptoms of coffee poisoning were not persistent, as discontinuing the use of the poison was rapidly followed by great amelioration, certainly much more prompt than that which followed giving up the use of alcohol.

Various troubles affecting the genital and urinary systems had also been observed, but they did not occur frequently. In children an arrest of development had been noticed. These different disorders, said M. de la Tourette, should be especially observed by the physician, and their diagnosis considered important, for, if the cause was discovered and removed, the symptoms disappeared very rapidly.

Inanition Fever in the Newly Born.—The *Archives of Pædiatrics* for August publishes an article on this subject by Dr. L. Emmett Holt, who remarks that he uses this term to describe a fever usually seen during the first four or five days of life, which is independent, so far as has yet been determined, of any local or general disease, but apparently due to starvation. The term, he says, serves to emphasize the connection of this fever with the fact that the food is insufficient or is entirely wanting. The author relates the following case, which was reported at a society meeting by Dr. J. W. McLane, of New York, but not published, so far as Dr. Holt knows: The child when born was healthy, but on the sixth day Dr. McLane was called to come at once, as the baby was very ill. He found the temperature 106° F., and was told by the nurse that it had been in that neighborhood for three days. The infant had lost weight so rapidly that he could scarcely believe it was the same child. The skin was hot and dry, the pulse was weak, and the general appearance was that of a child that had but a short time to live. The infant had been put to the breast every two hours regularly, but did not seem to be satisfied. On examination, the mother's breasts were found to be absolutely dry, and it is probable that they had never secreted anything worth mentioning. A wet-nurse was at once secured, and without other treatment the temperature fell in a few hours to normal, and did not rise again. The improvement in the general condition was rapid, and the child was soon perfectly well.

The following case, which was recently observed in private practice, is, says Dr. Holt, a fairly typical one also of the severe type of the disease. The patient was the second child, the first having died at the age of ten days, apparently from no disease, but simply from inanition. At birth the infant, a boy, weighed eight pounds and a quarter, and was apparently vigorous. During the first forty-eight hours his loss in weight was five ounces and a half, but his condition was good. The author saw him on the evening of the third day. In twenty-four hours he had lost eight ounces in weight and the temperature had gradually risen, until at the time of his visit it was 102·8° F.

The child was limp, entirely without resistance to examination. He cried with a feeble whine, and the restlessness of the early part of the day had given place to a complete apathy. The lips and skin were very dry, the fontanelle was sunken, and the pulse was weak. As the father—a physician—expressed it, "he had been wilting through the day like a flower in the sun." Although he had been put to the breast regularly, the child had apparently got very little. It was found impossible to press any milk from the mother's breasts. Water was given at once freely and a wet-nurse secured in a few hours. The first milk was taken from the wet-nurse at 11 P. M.; the temperature fell gradually during the night, and the next morning it was normal and did not rise again. During the succeeding four days the child gained eighteen ounces in weight, and at the end of a week was as well as any ordinary infant of his age.

During the past five years, Dr. Holt says, his observations upon the temperature of the newly born have extended to upward of three thousand cases. They have established the fact, he says, that it is not uncommon for newly born infants to have during the first five days a rise of temperature to 102° or even 104°, which is accompanied by no evidence of local disease, and ceases, in nursing infants, with the establishment of the free secretion of the mother's milk. It is also arrested by artificial feeding, and very often by water if freely given. The fall in temperature is often quite rapid, frequently reaching the normal in a few hours after the elevation has lasted for three or four days. In a large number of cases it does not rise again. The symptoms, says the author, are so uniform and so characteristic that they make a class by themselves. The frequency with which this is seen is shown by the following statistics: Among two hundred infants taken successively at the Nursery and Child's Hospital twenty had fever during the first five days, the temperature reaching 101° F. or over, which was not explained by ordinary causes, and followed the course described above. Out of five hundred successive children born at the Sloane Maternity Hospital there were one hundred and thirty-five with a similar fever. It was seen in stout, robust infants as well as in those who were delicate. The temperature usually touched the highest point upon the third or fourth day of life. In about two thirds of the cases the temperature did not rise above 102° F. In nine the temperature was 104° F. or over, the highest recorded being 106°. The duration of the fever was usually two or three days. The fall was generally quite abrupt, although not always so. Daily weighings made in these cases showed that the infants continued to lose weight while the fever lasted, and that the loss almost invariably exceeded by several ounces that in children who had no fever. The maximum loss noted was twenty-eight ounces. In quite a large number of cases it exceeded twenty ounces; the average loss among healthy infants is ten ounces. As a rule the infants began to gain in weight as soon as the temperature remained at the normal point, but not until then.

The symptoms presented by these infants, says the author, were a hot and dry skin, marked restlessness, a dry mouth, and a disposition to suck vigorously anything within reach—everything indicating great thirst. With a very high temperature there was considerable prostration and there was a weakened pulse. In the milder cases there were only unusual restlessness and crying. The rapidity with which the symptoms disappeared when the children were nursed or fed was striking.

It is important, says Dr. Holt, that this fever should be recognized even though the symptoms are not generally severe, as the extra loss of a quarter or of half a pound during the first week is a serious handicap to a newly born infant, and one the effects of which may last for more than a month. It has been made the rule, he says, to take the temperature of every newly born child during the first week. All the usual local causes of fever are first to be excluded by a physical examination. This fever can hardly be confounded with pyogenic infection, for that rarely begins before the fifth or sixth day.

The treatment is simple—viz., to give water regularly every two hours in quantities up to an ounce at a time if required by the thirst of the child. This should be done in every case where the temperature reaches 101° F. In case the temperature does not at once begin to fall, the infant should be put upon another breast, or artificial feeding should be begun. Examination of the breasts from which the child has been nursing will usually reveal the fact that the secretion of milk is very scanty, and often that it is entirely absent.

Such fever occurring from the withholding of food and drink Dr. Holt says he has occasionally seen in older infants, usually in those who are nursing dry breasts, or where fluid and water have been withheld because of some gastric disturbance. It yields as promptly to treatment as the same condition in the newly born does.

Foreign Bodies in the Tongue.—The *Journal des sciences médicales de Lille* for June 29th publishes an article by M. L. Derville on this subject, in which he remarks that foreign bodies deeply imbedded in the tissues seldom present much interest, although the singularity of their nature, the peculiarity of their situation, or the mechanism of their penetration may merit a description. There are, however, some cases of the highest clinical importance. These foreign bodies may give rise to the appearance of serious troubles, and sometimes grave operations have been performed, after which it has been found that a mistake had been made in the diagnosis. This has occurred rather frequently, says the author, in cases of foreign bodies in the tongue, and the most skillful physicians have been deceived as to the nature of the trouble. The author relates the following case as an illustration of the foregoing remarks: The patient, a man fifty-five years old, presented a lesion of the tongue, which annoyed him very much in speaking, and for seven or eight days it had been accompanied with a rather sharp pain of a distinctly neuralgic character, which extended to the head. When questioned as to the probable cause, the patient stated that his health was excellent, but that his wife, who was a midwife, had contracted a lesion on the base of the right thumb which had been pronounced to be a syphilitic chancre. This had been followed by adenopathy, roseola, and several syphilitic outbreaks on the mucous membranes. The physicians whom the patient had consulted had thought that, taking into consideration the man's statement, the lesion of the tongue might be of a syphilitic nature, and accordingly had instituted the specific treatment. No results whatever followed the treatment, and the patient called upon M. Derville, who made an examination of the tongue and found that it was perfectly normal in color, but that it was very thick on the left side. He seized the tongue in order to practise palpation, and the instant he put his finger on the lower surface a thin stream of a yellowish serosity appeared on the dorsal surface of the organ. It was impossible to discover an opening; the liquid seemed to come from between the lingual papillæ. The end of a fine probe was introduced and, at a depth of about two centimetres, it struck against a hard body. M. Derville questioned the patient, who made the following statement: Some months before, while slightly intoxicated, he had taken part in a quarrel and had been struck on the face; at the time he had had a pipe in his mouth, which had received part of the blow. He had felt no pain, but there had been some blood in his mouth. He had noticed that the small amber piece of the pipe had been broken and had completely disappeared, although he had looked carefully for it. During that night the tongue had swelled considerably, but had not been very painful. The swelling had partly yielded to treatment, but the tongue had never recovered its normal size.

The patient's account, says M. Derville, absolutely confirmed the result of the examination, and he proposed a slight operation in order to extract the hard substance. He made a longitudinal incision a few centimetres long and succeeded in seizing the hard body with a forceps; but the instrument slipped and the teeth struck against the hard surface of the amber; so that it was only after repeated attempts that the author succeeded in extracting the hard substance, which measured two centimetres and a half in length and a centimetre in width. It was thick and blunt at both ends. Two days after the operation the tongue was completely cicatrized, and articulation and deglutition were as easily performed as before the accident.

M. Derville thought the case was interesting because of the difficulties which resulted on account of the diagnosis of the specific antecedents of the patient. When gummata of the tongue are situated deep in the muscular tissue, he remarks, they may assume an appearance slightly different from that which was shown by the lesion in the preceding case. Julien, he says, remarks that in the midst of muscular fibres gummata, more often lateral, may reach the size of an almond and even that of a small egg. In the majority of cases there are one or two, but sometimes they accumulate in confluent groups and increase the size of the tongue to such a degree that the buccal cavity can scarcely hold it.

Some points in the preceding case, says M. Derville, will be seen to agree with this description of deep lingual gummata. The lateral situation, the size, the hardness, the absence of functional phenomena, and the suspicious antecedents, if not of the patient, at least of the wife, all point to a syphilitic neoplasm, which very readily explains the error in diagnosis made by the physicians who first attended this patient.

The Dangers of Long Journeys in Certain Diseases.—In the *Journal des praticiens* for July 20th there is an article by M. Huchard in which he calls special attention to arterial cardiopathy and interstitial nephritis. Some years ago, he says, a man fifty years old, who had arterial cardiopathy, showed slight symptoms of renal insufficiency, with hyposystole, although there were no traces of albumin in the urine. The patient intended to make a long journey by rail, and M. Peter, who saw him in consultation with M. Huchard, made no objection to this. They were very much astonished, says the author, to hear that, two days after his arrival at Nice, he had been taken with dangerous symptoms of acute uræmia and had died in less than a week. In the same year another patient suffering with the same trouble died after a journey of twenty-six hours by rail. M. Huchard has also seen the same symptoms supervene in identical conditions, but without a fatal termination.

The trembling motion of the train, says M. Huchard, which so quickly produces symptoms of renal congestion and genito-urinary excitation, leads to the transformation, in arterial cardiopathy, and especially interstitial nephritis, of incomplete renal impermeability to a complete impermeability,, from which sometimes arise the fulminant symptoms of uræmia. M. Huchard thinks that patients who suffer with arterial cardiopathy or with interstitial nephritis, with slight symptoms of renal insufficiency, should avoid long journeys by rail. If, however, a long journey has to be taken, it should be done in easy stages, with intervals of several days for rest.

The following examples, says M. Huchard, demonstrate the unfavorable influence of long journeys on patients suffering with these troubles: A patient who had come under Prout's observation suffered very much from cold and seasickness during a tiresome voyage and died the following morning. Charcot mentions the case of a woman who, before leaving Paris for Switzerland, made a number of calls on foot and returned home completely exhausted. The following morning she became comatose, and death occurred very rapidly. Foster cites an observation of a man who took a very long walk in order to reach his home. He complained of feeling very tired, and on the next day symptoms of diabetic poisoning set in and he died on the third day. M. Huchard himself has observed a diabetic who suffered with arterial cardiopathy. This patient went to Paris, where he spent some time in taking long walks about the city. Eight days afterward he became comatose, and death rapidly supervened.

Here, says M. Huchard, the aggravation of the disease can not always be attributable to renal congestion, nor can the long journeys by rail be given as the pathogenic cause of the symptoms. It is known that the muscles, which are alkaline in a state of repose, become acid after repeated and energetic contractions, for a muscle that is tired is a muscle poisoned by acids, and especially by lactic acid. Now, fatigue, long walks, and violent exercise act in the same way as diabetic poisoning, which is nothing but an acid poisoning.

Hysteria.—In the *Journal des praticiens* for July 13th there is an article on this subject in which the writer remarks that there are few affections which hysteria may not simulate. The paralytic form imitates all varieties of paralysis, such as hemiplegia, monoplegia, and paraplegia. Hysterical apoplexy is frequent, as M. Debove has demonstrated. The contractures imitate torticollis, hip-joint disease, strabismus, and functional blepharospasm. The trembling assumes the most varied types, such as chorea, hemichorea, tic, etc. The hyperæsthesia ranges from the simple headache and ophthalmic migraine to meningitis, from lumbago to Pott's disease, from intercostal neuralgia to angina pectoris. The digestive troubles are absolutely protean. With regard to congestion, in the lungs it may reach hæmoptysis; in the stomach, hæmatemesis; in the breast, puffiness, which leads the patient to suspect tumor; in the limbs, bluish œdema, which is often incised as an abscess. To this list, says the writer, may be added oophoritis, metritis, cystitis, etc. In fact, there is no affection, whether medical or surgical, that may not be simulated by hysteria. How is it possible, then, asks the writer, to establish a distinct diagnosis in all cases where there is reason to suspect hysteria, or where it should be looked for?

First of all, it should be looked for in men as well as in women. According to Pierre Marie, it is more frequent in men of the common classes. The characteristics of the patients are indications only, and the accounts given by them are very often so uncertain and contradictory that they can not be depended upon. There remain, then, the sensitive, the sensory, and the muscular marks of Charcot. Anæsthesia may affect the sense of touch, that of heat, and that of pain at the same time, or it may affect only one of these senses. Hysterical anæsthesia is remarkable for its intensity. The cutaneous and the vaso-motor reflexes are preserved. Hyperæsthesia may be looked for in the subclavicular and submammary regions, in the testicles, in the ovaries, etc. As the hyperæsthetic zones are often hysterogenic, it is not well to make too thorough an examination in women, as it may provoke an attack.

With regard to sensory troubles, insensibility of the cornea and of the conjunctiva, with loss of the corneal reflex and color-blindness, is observed. Blepharospasm with palpebral anæsthesia is rather frequent. But the true mark of hysteria is the regular and permanent concentric shrinking of the visual field, and the intervention of an ophthalmologist is often necessary. The sense of hearing, that of taste, and that of smell are often diminished. Loss of sensibility of the pharynx is also observed.

The most important muscular mark is the diathesis of contracture. Pressure, traction, or a shock is often sufficient to produce it, and here, also, too thorough an examination should not be insisted upon, as it might provoke a lasting contraction. The association of several marks should be especially looked for, as an isolated mark has little value.

With regard to the prognosis of hysteria, says the writer, it is, on the one hand, unfavorable, because it is impossible to foresee the duration, which may be for many years, or the intensity, or the sequence of complications; on the other hand, it is favorable, for, of all the varieties of paralysis, angina pectoris, the œsophagismus, etc., the hysterical variety gives the most complete and definitive recoveries. Frequently, too, hysteria only is found when the affection was thought to be meningitis, tuberculosis, cancer, etc.

With regard to therapeutical indications, hysteria being, above all, a disease of the will, in which the patient is indulged in his fancies by those around him, the treatment by isolation and a change of surroundings is the one most frequently indicated.

Among the causes of hysteria is poisoning by lead, alcohol, mercury, tobacco, or morphine. In making an examination of an hysterical patient, it is wise, says the writer, not to make a diagnosis of hysteria unless the physician wishes to rid himself of a troublesome patient, but to call the affection neurataxia, a word proposed by M. Huchard in 1883.

Southern Hospitality.—Dr. George Brown, of Atlanta, has generously issued the following circular: "From the present outlook, the Cotton States and International Exposition will be one of the events in the history of our country, and especially of the South. Realizing the immense number of physicians who will be present from all parts of the United States and other countries, I have decided to offer my mite of Southern hospitality to my visiting brethren. Therefore, I extend a cordial invitation to any physician who may visit our city to make my office his headquarters. Send mail, telegrams, etc., in my care, and I will cheerfully engage rooms, etc., in advance for any one if advised to do so. The only request I make is to inclose postage for letters of inquiry, which will be cheerfully answered. For any services I may render no fee, commission, or any perquisites whatever will be received or expected."

The Late Dr. Edward R. Palmer, of Louisville.—A distinguished Louisville physician, in a letter to a friend in New York, writes as follows of Dr. Palmer: "He was so full of life and buoyancy, and seemed to be so untouched by the passing years, that we never associated death with any early period of his career. He was the youngest man for his age I have ever seen. You would have been very much touched if you had been present at the funeral. At the interment in Cave Hill Cemetery, which occurred just at sunset on a beautiful summer day, all the 'boys,' such as Larrabee, Mathews, Kelly, Cartledge, Stucky, Grant, McMurtry, and others, stood around the grave and each dropped a rose on the casket ere it was forever shut from mortal view. We shall miss him keenly; we shall bear him tenderly in memory."

The Anatomy of the Sympathetic Nerve.—The publishing house of E. H. Colegrove & Co., of Chicago, has issued a useful engraving showing the course and distribution of the sympathetic nerve, from a dissection by Dr. Byron Robinson, of Chicago.

The Eye and Ear Hospital of Pittsburgh, Pa., opened its doors to patients on July 1st. The medical officers are Dr. J. E. Willetts, Dr. C. A. Wishart, Dr. E. W. Day, and Dr. E. G. Matson.

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Original Communications.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

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In looking over the reports of the health department of this city, we find that the mortality from tuberculosis is by far greater than that of almost any other disease. The reasons for the same are that the hygienic conditions in this city are so poor, especially so where patients live in crowded, ill-ventilated apartments, and where not only fresh air, but food and proper treatment are lacking. On the other hand, we are surprised to learn such gratifying results from the various sanitariums devoted to the special treatment of consumption, be it in the South, in Macon, Ga., or Asheville, N. C.; be it in Florida, be it in the extreme West, in Denver, Col., or even as near to us as in the Adirondacks or the Catskill Mountains. Let us compare the treatment of tuberculosis in this city with that of tuberculosis treated in special institutions, and we find that the elements which are most imperative to the re-establishment of health are: First, pure air, sunlight, quiet—and by quiet we mean discontinuing all labor, be it mental or physical, and devoting one's self to nothing but pure recreation. It is not my intention in the course of this paper to go into details of the climatic treatment of tuberculosis, nor do I wish to refer to the climatic results of dry air compared with moist air, but I merely wish to speak of the ill effects from constant and sudden changes of temperature as encountered in this city.

How often do we find a father with pulmonary tuberculosis dying in the course of six or seven months, to be followed by his wife or probably some of his children, if any are present, which has been traced to a distinct infection.

This brings us to the modern view of tuberculosis. It is a well-established clinical fact and one which has caused thousands of arguments, that tuberculosis to-day is not regarded as a hereditary disease, but we have come to regard it as an acute, specific, infectious disease. The infection is brought about by the introduction of the tubercle bacillus into a usually weakened or subnormal body with little resisting power, and hence the tubercle bacillus, finding its proper soil, develops and infects and spreads, until we have from a small focus in the beginning a very largely distributed disease. The method or the way in which a patient contracts tuberculosis is so simple that it merely requires a word. Recognizing, as we do, the infectious nature of tuberculosis, it requires but the dried sputum in the house of a tuberculous patient to transmit the bacilli through the air, which will lodge in the pharynx, possibly larynx, and may even be carried lower down into the bronchi, and in this manner enter and infect the lung; or it has been known that tuberculosis can be communicated through a surgeon's knife having some bacilli on it and directly infecting the surgeon by an accidental slip of his knife. There are also evidences of the infection of the tubercle bacillus through the food by means of the stomach, although it has been claimed that under ordinary healthy conditions the gastric juice, or rather its hydrochloric acid, can neutralize and prevent the infection of the human organism while in health. It is possible that an infection can take place if a patient's stomach is weakened and the normal gastric juice wanting.

Let me cite a case which happened some time ago during the course of treatment of a young lady who died of pulmonary consumption:

> The last days of her illness her expectoration was almost a pure culture of tubercle bacilli. A few days before her death the glass vessel into which she used to spit was broken and the nurse attending her pricked her finger with one of the fragments of this glass. She subsequently had a whitlow on her middle finger. Various antiseptic remedies were used with little or no success. There was a slight trace of suppuration for about eight days following the injury, and there could be felt in the subcutaneous cellular tissue a little hard lump of the size of a pea. It was rather painful and slightly œdematous. Although this small nodule was cut out, which lay between the skin and the tendon, the wound healed slowly, but it healed under a dressing of iodoform and bichloride of mercury. About a month later the patient again presented herself with a much larger swelling affecting the same finger, but extending to the palm of her hand and interfering with the movements of flexion. The disease got worse. The glands in the forearm and in the axillary region were noticed to be enlarged. In other respects this woman was in good health; nothing abnormal about the lungs could be detected. It was determined to extirpate the enlarged glands of the axilla and the forearm and also to amputate the finger at the metacarpo-phalangeal articulation. The wound healed completely in eleven days with antiseptic dressings. Under the microscope, however, the tissue was found studded with typical tubercles, tubercles that had caseous centres and giant cells, and around the giant cells, and more frequently in isolated positions, tubercle bacilli were found in large numbers.

It has been demonstrated that the antiseptics can destroy germs and neutralize their products in the stomach and intestines. This can be more readily appreciated when we have severe toxic symptoms in the course of an ordinary septic gastritis, wherein the patient suffers from poisoning, the result of absorbed toxines from an improper diet. That these can be removed has been proved by placing antiseptics in contact with these fermentative products and neutralizing them. That the blood, however, can not be rendered sterile has been amply proved by Hoelscher in the *Berliner klinische Wochenschrift*, 1892.

In our country Professor Beverley Robinson has long advocated the use of creosote in the treatment of tuberculosis. Besides, Dr. R. W. Wilcox and Dr. Gottheil have published cases and advocated creosote in its various forms for the treatment of tuberculosis. In Europe Bouchard and Sommerbrodt should be given due credit. Sommerbrodt has recorded five thousand cases, and his conclusions as to the efficacy of the drug are decidedly favorable. The more the drug can be tolerated, the larger the possible dose, the better the effect. In quite a large number of cases the crude creosote could not be given, owing to disordered stomach and the irritant effect of the creosote on the same. Chemistry has succeeded in so combining the poisons with other substances as to render them non-irritating without causing them to lose their antiseptic power. This has been done by combining them with organic acids, such as salicylic acid, benzoic acid, or carbonic acid, and with bismuth.

By the introduction of creosote carbonate as a substitute of the crude drug, von Heyden placed at the disposal of the profession a non-irritant, non-poisonous preparation, containing ninety-two per cent. of the purest creosote from beechwood tar, chemically combined with eight per cent. carbonic acid, borne well in large doses by the most delicate stomachs. It has enabled the drug to be employed in sufficiently large doses, so that the results obtained have been very good. To prove the elimination of the drug, not only the breath gives ample evidence of it, but also the dark color of the urine shows that the drug has been absorbed and excreted. I have never seen ill effects from the same, nor any irritation of either bowels or stomach, nor does it cause diarrhœa in the weakest infants.

The cases which I shall record have been those in which the drug has been given a careful trial, and cases in which the hygienic surroundings and the food have been of the poorest kind, owing to the little means at the disposition of the family. While I do not mean to say that we can begin treating all cases of tuberculosis with enormous doses of creosote, I would state that I have not yet encountered a single patient in whom an idiosyncrasy against creosote carbonate was manifest.

A girl, twelve years old, was first seen by me about nine months ago. She was brought to my children's clinic at the New York Post-Graduate Medical School suffering with headaches, cough, general malaise, poor appetite, emaciation, the bowels irregular, at times constipated, at other times diarrhœa. The urine, light amber color, contained nothing abnormal. The child perspired exceedingly at the slightest exertion, even after each paroxysm of coughing. At the first examination she appeared slightly icteric; the spleen was found slightly enlarged, the liver normal, the lungs on auscultation showed some mucous râles, no evidence of consolidation, and no dullness of the apices. There was a slight expectoration, chiefly in the morning. She had never had any hæmorrhages, nor had there ever been any hæmoptysis. Twice, however, she had had epistaxis. The child was sent to the throat department with the request to have the nose examined for polypus, but it was found to be normal. The diagnosis was not immediately made, but a suspicion of tuberculosis was expressed. The previous history of the case showed a rhachitic child, who had had measles followed by a pneumonia, a long-continued cough extending from the fall through the winter into the spring. Then whooping-cough set in, lasting about four months. This was in all about ten years ago. Since then the child has suffered from a cough every winter, and even at times in the summer, besides suffering with extreme cholera infantum for two summers. The teething was quite regular. There was no evidence of rheumatism, scrofula, or syphilis in this family. Father and mother are both living and healthy. Four other brothers are healthy; one child died of an injury, so that in this case we have a clear history of cough, a weakened state of the respiratory tract due to constant inflammatory and catarrhal conditions, dating from the time of childhood and extending up to the present time. The child was put on cod-liver oil, upon syrup with hypophosphites, ordered sea-salt sponging and light moderate exercise in the open air; advised to sleep with an open window and to live on a good strengthening diet, of which milk, farinaceous food, kumyss, buttermilk, eggs, meat—in fact a distinct animal diet—was the substance. I advised against using any and all forms of alcohol, indigestible food like cakes, pies, and pastries and fried meats, and an excessive amount of potatoes and vegetables, especially those that tend to flatulency, like peas, beans, and especially cabbage were advised against.

The test for determining a benefit in all my cases of tuberculosis has been the scales. I insist on having all my patients weighed and the date noted, and look upon an increase in weight, allowing for the ordinary physiological increase of weight in children, as a beneficial result, which I always attribute to the effects of the treatment.

In September last this child weighed forty-eight pounds. She was put on the use of creosote carbonate, three drops in capsules, three times a day, and next ordered a discontinuance of the cod-liver oil, the hypophosphites, and all previous treatment. I determined to test the efficacy of the creosote carbonate. Seeing no decided result, I increased by two drops every day until she reached twenty drops three times a day. I found that the quantity was too large to be given in capsules, so we had the creosote carbonate mixed with the yolk of an egg and a little syrup, which made quite a pleasant emulsion, giving her a tablespoonful of this mixture, each containing twenty drops of creosote carbonate, three times a day, after breakfast, dinner, and supper. I not only saw a change in the increase of appetite and in the disappearance of the symptoms of malaise very perceptibly, but I was astounded to find my patient increasing in weight and really gaining fat. At the present time of writing, which is nine months after the commencement of the treatment, she has gained in all twenty-nine pounds. There has been no diarrhœa or gastric irritation during the course of the treatment.

At the beginning of this treatment some of the sputum of this patient was submitted for examination for the presence of tubercle bacilli. It was found, that although bacilli were present, the morning sputum contained the largest number; this was repeatedly demonstrated. Each month her sputum was carefully examined, and it was frequently found that although some of the muco-purulent expectoration would show an occasional typical bacillus in the field of the microscope, that only that sputum which was expectorated at the early morning hours, at the dawn of day, between 4 and 6 A. M., contained at times great numbers of typical bacilli. After four months of this treatment, or in January, it was found that the bacilli in the morning sputum was so sparingly present that evidently some change was going on. The symptoms of headache and malaise disappeared entirely. The icteric condition, which I reported in the beginning of this case, disappeared perceptibly, the appetite increased, until my patient desired a great deal more than she received, and was constantly hungry. The epistaxis has not shown itself within the last five months. A careful examination of the sputum four times a month since January last has not shown a single tubercle bacillus.

If we can rely on the statements of such careful clinical observers as Loomis, who has shown that tubercles and cavities in the lungs can and do heal, then we have good reason to believe that in this patient, in whom we diagnosticated apex tuberculosis or a catarrhal tuberculosis affecting the apices of both lungs, this process was arrested in its incipiency. I do not wish to state that this patient would have been cured unless all other factors, such as the strictest attention to diet, the observation of the strictest hygienic measures, consisting of ventilation, bathing, exercise, gentle friction of the chest wall with a rough towel to stimulate the circulation, pulmonary gymnastics, consisting of long and frequent inspiration, followed by slow expiration to exercise the chest wall, had been brought into play; but I am confident that in this particular case the result may mainly be attributed to the efficacy of creosote carbonate.

Another striking illustration of the efficacy of this treatment was shown in the following case:

A child, two years old, was brought to my children's clinic at the Post-graduate Hospital about a year ago. There was a history of cough and emaciation. The child had diarrhœa, general symptoms of exhaustion, so that a superficial examination and the objective symptoms would have led me to believe that we were dealing with some form of severe cholera infantum. A note from the attending physician accompanied the child, stating that she had had marasmus, summer complaint, but that he could not account for the lack and loss of flesh and the extreme exhaustion. At the time I first saw the case the temperature was 100°, pulse 140, very small, feeble, but quite regular. The cough was paroxysmal in character, and reminded me more of the spasmodic cough that we frequently meet in whooping cough. The child was a nursing baby; had been vaccinated; had had measles, bronchitis, and a slight attack of diarrhœa. There had been no other previous illness. The father had died when the child was thirteen months old of pulmonary tuberculosis, from which he had suffered in all but sixteen months. This infant was crowded with three other children, besides the parents, in two small rooms in an ordinary rear house behind a tenement house, as we frequently see them in this city. The air was stifling, and noxious odors filled it from adjoining closets located in the yard.

In a case of this kind, before arriving at any diagnosis, it is well to inquire as to the hygienic surroundings. This child had no expectoration, and the diagnosis of intermittent fever was made at the time I first saw her. The child was put on a supporting plan of treatment, concentrated liquid diet, iron, cod-liver oil emulsions externally, and fresh air, and watched. It was, however, found that the emaciation still continued. The second month after the commencement of the treatment a diarrhœa suddenly appeared, and small particles of mucus mixed with blood passed from the bowels. Careful examination of the fæces would at times reveal large masses of muco-purulent matter, as we would notice in any expectorated matter from an adult. A bacteriological examination of some of this muco-purulent matter showed tubercle bacilli. I at once decided to put the child on creosote carbonate. I should like to state that a most careful examination of the thorax showed the lungs in an apparently normal condition. The throat was also negative. Liver and spleen quite normal, and the conjunctival mucous membrane very pale, bloodless; slight (anæmic or flowing) murmurs could be distinctly heard in the vessels of the neck, which we recorded as anæmic murmurs.

The child at the beginning of the creosote carbonate treatment weighed twelve pounds.

It was next determined to keep the child on a mixture of one part oatmeal, two parts cow's milk, a slight amount of milk, sugar, and ordinary common salt. The oatmeal in this case was given to correct the constipation that existed at times. I began with two drops of creosote carbonate, given in an emulsion of yolk of egg with a little sugar three times a day, preferably after feeding, and increased the dose one drop every three days until I reached ten drops three times a day. After a month's treatment the child weighed fourteen pounds and three quarters. At the time of birth this child weighed eleven pounds, and the mother told me that the child was stronger and stouter than at the time of the commencement of the treatment, and that it had gained in reality in thirteen months but one pound. The creosote carbonate was continued for four months at the rate of ten drops three times a day. There were no symptoms of poisoning manifest, but there was a constant increase in appetite; there were no diarrhœal symptoms, but rather a tendency to constipation; there was no vomiting and no gastric symptoms which could be attributed to the drug. The urine was carefully watched, and no symptom of creosote poisoning could be detected. Occasionally there was a brown color to the urine, but nothing that indicated severe systemic poisoning.

While the child was under the expectant plan of treatment it was necessary to give various doses of chloral hydrate, sulfonal, and other drugs to produce sleep, contrary to my advice and warning; whereas, since the beginning of the creosote treatment I have resorted to nothing to produce sleep but warm bathing before retiring. In this case it was found advisable to give the child a warm bath in the evening rather than in the morning, and this seemed to have a very soothing effect upon the nervous system. The temperature of the child never was above 100°. Almost after the first ten days the symptoms of emaciation, of excessive diaphoresis seemed to disappear. The child is quite bright, and within the last two months very playful. Dentition, which at the time of the beginning of the treatment was very slow, is progressing very favorably. At this same time there were but two incisors present. During the last eleven months the child has sixteen teeth, and they are quite regular. The cough has now disappeared in less than two months. Although a very careful examination has been made from time to time of the various excreta for the presence of tubercle bacilli, we have not been able to find a single bacillus for about two months.

This case was reported by me at the Post-graduate Clinical Society during a discussion of Dr. Crook's paper on the value of creosote treatment in phthisis. It was really instructive to have this case report every Monday at my clinic and to demonstrate on the living what we have always wished for theoretically. In all the cases I have excluded stimulation, relying more upon Nature's own remedies, supporting diet, treating symptoms as they arose, taking care of existing diarrhœa or constipation, but generally did not give any antipyretic if the fever persisted, but rather removed the cause, as for example, during the course of a treatment a slight gastritis, required irrigation of the stomach, and that was all.

To sum up then, I wish to emphasize the importance of first making a correct clinical and if possible bacteriological diagnosis, note also both all objective, and if the patient is old enough, the subjective symptoms. By all means determine the patient's weight; for I believe this a determining factor of estimating the value of any treatment, be it medicinal, dietetic, or otherwise, and hence all my cases are instructed to be weighed once every month. In children we always allow for the normal physiological increase of weight, but as in the case reported above, where the child weighed as much one year after birth as at the time of birth, it seems that physiology was wrong in that case. In giving a drug, as the creosote carbonate, it is wise to watch each case individually, for although I did not see any idiosyncrasy in any case, it is better to increase the dose by allowing an interval of at least a few days.

A child at present under treatment in my dispensary of the German Poliklinik, who is about three years old, receives twenty-five drops of creosote carbonate three times a day with no ill effects.

I have found a better result from the administration of carbonate creosote after meals and in infants after feeding. While the object of this paper is merely to record a successful issue of various forms of tuberculosis treated in this manner, I have frequently examined also the blood of the patients during the course of the treatment, and found that the percentage of hæmoglobin was materially increased, and also that the relation of the red and white blood-corpuscles was considerably increased in favor of the red corpuscles. The percentage of hæmoglobin in one case increased from forty-eight to almost a hundred per cent. This must, however, be partly attributed to the contributory treatment consisting of supporting diet and appetite, which was cultivated during the administration of the drug.

187 Second Avenue.

THE LEUCOCYTOSIS OF DIPHTHERIA UNDER THE INFLUENCE OF SERUM THERAPY.

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(*Concluded from page 168.*)

The importance of the nucleus in the cellular reaction of the organism against infection has been indicated by Klemperer. After the observation of Kossel, that nucleinic acid destroys the cholera germ very rapidly, Klemperer demonstrated the presence of this acid in the nuclei of the intestinal epithelial cells by the green coloration produced with Ehrlich's triacid mixture. He regards the acid existing in the nuclei of epithelial cells as the true agent in immunity against cholera.

Lilienfeld and Posner have also demonstrated the presence of an acid in the nuclei of epithelial cells by the green color produced with methyl green. Though failing to see how an acid contained in the nuclei of epithelial cells can affect bacteria free in the intestinal lumen, they find that injections of nucleinic acid not only destroy the cholera germ, but enfeeble the action of the choleraic toxine.

Buchner maintains that the cellular principle concerned in immunity is not nucleinic acid, the bactericidal action of which is destroyed by cold but is unaffected by moderate elevations of temperature. The bactericidal power of the purulent exudate previously described is, however, not at all affected by freezing, is destroyed by a moderate degree of heat, and must therefore depend upon the presence of some principle other than nucleinic acid.

These observations, then, point to the possible importance of the nucleus as the special agent in the phagocytic cellular reaction and defense of the organism against bacterial invasion. The variation of the staining qualities of leucocytes to be found in diphtheria is believed to offer further evidence that some principle exists in the nuclei of these cells which is very susceptible to the action of bacterial toxines, the normal presence of which is necessary to positive chemotaxis and phagocytosis, and which is conserved or restored by immunizing serum.

SUMMARY.

Diphtheria is usually attended by pronounced leucocytosis. The increase of leucocytes begins a few hours after the infection, probably appearing earlier in refractory individuals, and often being long delayed in susceptible cases with severe infection. In favorable cases the leucocytosis is greatest at the climax of the disease, and steadily declines during convalescence. There may, however, be prolonged hyperleucocytosis after other local and constitutional symptoms have subsided.

In unfavorable cases, the leucocytosis continues until death; but in somewhat prolonged cases, with much septic absorption, there may be an uninterrupted decrease of leucocytes continuing up to the fatal termination.

A complicating pneumonia usually causes a considerable increase in leucocytosis.

The degree of leucocytosis in diphtheria often varies with the fever, but much more frequently corresponds to the extent of the local lesion.

The intravascular leucocytosis of diphtheria measures exactly the systemic reaction against the toxic products circulating in the blood and absorbed from the site of infection.

High leucocytosis in diphtheria indicates a pronounced reaction against a severe infection, but is not necessarily an unfavorable prognostic sign.

Steadily decreasing leucocytosis usually, but not always, accompanies a favorable course in the disease.

Slight leucocytosis usually indicates a mild infection, but fatal cases may for several days show no increase, or even a decrease, of leucocytes.

The staining reaction of the leucocytes is an accurate measure of the severity of a diphtheritic infection, and variations in this reaction often precede changes in other symptoms.

Antitoxine, within thirty minutes after its injection, causes a hypoleucocytosis, the reduction affecting specially the uninuclear leucocytes, while the proportion of well-stained multinuclear cells is increased. This action is due largely to the immunizing principle contained in the serum.

In favorable cases, after the injection of antitoxine, the leucocytosis never again reaches its original height. In severe and less favorable cases, the injection is followed in a few hours by hyperleucocytosis and fever, exceeding those symptoms as found in the original condition. In unfavorable cases, an injection of antitoxine may be followed immediately by rapid hyperleucocytosis or extreme hypoleucocytosis and death.

The reduction of leucocytes immediately succeeding the injection of antitoxine, especially in severe cases of diphtheria, is an undesirable feature of the action of this agent, and as far as possible should be avoided.

The multinuclear leucocytes found in the blood of favorable cases after treatment by antitoxine show increased affinity for gentian violet. This change may be observed within twelve hours after the injection, and the failure of its occurrence is a very unfavorable prognostic sign.

The variations in the staining reaction of leucocytes in diphtheria indicate that the nuclei of these cells contain a principle essential to phagocytosis and immunity in this disease.

No.	Age.	Day of disease.	Highest temperature.	Highest pulse.	LEUCOCYTES PER CUBIC MILLIMETRE.											Remarks.
						Per cent. in salt solution.				Per cent. in dry preparations.						
					Total.	Mononuclear.	Well-stained polynuclear.	Poorly stained polynuclear.	Ameboid figures.	Small lymphocytes.	Mon nuclear leucocytes.	Large mononuclear. Vesicular nucleus.	Polynuclear. Vesicular nuclei.	Polynuclear. Compact nuclei.	Eosinophile.	
1	3 yrs.	6th	103·2°	140	......	..	..	..	..	..	..	..	..	..	..	Condition on admission, grave; tonsils large; many small patches of membrane; much hyperæmia; Klebs-Loeffler cocci. Injected, sixth day, 700 im. u.; seventh day, 600 im. u.; ninth day, 600 im. u.; tenth day, 300 im. u. Died—sepsis.
		7th	103·6	156	26,000	14	60	30	14	2	14	8	11	66	0	
		8th	104·4	176	45,500	24	44	130	14	6	8	5	4	77	0	
		9th	103·4	172	36,000	22	38	84	15	2	16	3	9	70	0	
		10th	102·6	164	28,500	28	28	58	16	1	16	6	12	65	0	
		11th	105·6	160	20,000	24	16	40	20	0	13	8	9	70	0	
2	3 yrs.	4th	104·0	140	72,500	192	80	18	6	10	50	0	9	31	0	Condition grave; small amount of membrane on tonsils; laryngeal stenosis; intubation; Klebs-Loeffler, twenty-fourth day. Injected, third day, 500 im. u.; fourth day, 500 im. u.; thirteenth day, condition precarious. Albumin, five per cent. Recovery (?).
		5th	104·4	160	72,000	196	74	14	4	12	44	3	5	44	2	
		7th	102·0	160	41,500	84	62	12	8	12	40	3	2	38	2	
		9th	101·0	138	30,000	40	56	20	4	10	30	3	8	46	3	
		12th	104·5	156	24,000	34	54	8	2	8	34	3	2	52	3	
		13th	104·6	172	17,750	13	36	20	13	..	..	..	..	..	..	
		14th	105·0	170	18,500	10	56	8	2	..	..	..	..	..	..	
		16th	105·4	160	20,000	8	60	10	4	..	..	..	..	..	..	
		17th	104·0	140	15,000	6	48	6	2	4	18	8	3	64	3	
3	7 mos.	6th	100·0	180	16,000	30	34	8	0	32	31	0	0	37	0	Condition fair; no visible membrane; croupy cough; Klebs-Loeffler; cachexia; prolapsus recti. Injected, sixth day, 300 im. u. Death (cachexia), twentieth day.
		7th	.....	...	22,500	46	16	10	2	35	27	5	0	33	0	
		8th	99·0	180	25,000	58	32	10	0	12	50	6	2	30	0	
		10th	99·4	190	28,000	56	36	20	0	..	..	..	..	..	..	
		11th	.....	...	31,000	52	48	24	2	5	34	10	9	31	1	
		12th	99·4	190	24,500	38	42	16	3	..	..	..	..	..	..	
		15th	101·4	146	15,000	26	6	28	4	10	33	5	2	53	0	
4	16 mos.	4th	99·4	174	12,500	8	24	14	4	0	10	6	4	80	0	Condition grave; no visible membrane, stenosis; intubation; Klebs-Loeffler cocci. Injected, fourth day, 500 im. u.; sixth day, 500 im. u.; ninth day, scarlatinoid rash. Died.
		5th	102·6	186	35,000	18	108	14	4	0	10	6	4	80	0	
		6th	101·4	164	29,000	24	84	8	6	0	19	6	3	72	1	
		40 min. after injection.	.....	...	14,000	12	36	8	2	3	21	2	2	72	0	
		7th	100·6	180	20,000	30	60	28	6	9	12	17	2	60	0	
		10th	103·0	190	32,500	10	90	30	6	9	12	18	2	59	2	
5	11 mos.	10th	103·6	164	......	..	..	..	..	..	..	..	..	..	..	Condition very grave; no visible membrane; tonsils large; profuse nasal discharge; probable pneumonia. Injected, tenth day, 500 im. u.; eleventh day, 500 im. u. Died.
		11th	107·4	210	22,000	16	20	52	8	0	6	23	4	67	0	
		40 min. after injection.	.....	...	19,500	8	28	42	8	0	18	10	1	71	0	
		12th	108·6	...	......	..	..	..	..	..	..	..	..	..	..	
6	11 mos.	4th	102·4	180	......	..	..	..	..	..	..	..	..	..	..	Condition very grave; small patches on tonsils; stenosis; intubation. Injected, fourth day, 500 im. u.; fifth day, im. u. Died.
		5th	105·0	200	41,500	16	84	64	6	6	8	12	4	70	0	
		1 hr. after antitoxine.	.....	...	26,500	6	48	52	14	11	7	1	0	81	0	
7	4 yrs.	8th	102·6	124	......	..	..	..	..	..	..	..	..	..	..	Condition very grave; thin membrane on tonsils; no hyperæmia. Injected, eighth day, 600 im. u. Died, twelfth day—pneumonia.
		9th	103·8	140	17,500	..	..	..	..	12	10	5	12	60	1	
		11th	104·6	186	21,500	14	44	28	8	17	13	4	4	61	1	
		12th	103·4	196	32,000	13	69	46	12	3	6	10	10	70	1	
8	16 mos.	4th	99·6	152	......	..	..	..	..	..	..	..	..	..	..	Condition grave; thin membrane on tonsils; extreme stenosis; intubation
		5th	101·0	160	21,000	13	61	8	5	2	22	12	5	59	0	

No.	Age.	Day of disease.	Highest temperature.	Highest pulse.	LEUCOCYTES PER CUBIC MILLIMETRE.											Remarks.
						Per cent. in salt solution.				Per cent. in dry preparations.						
					Total.	Mononuclear.	Well-stained polynuclear.	Poorly stained polynuclear.	Amœboid figures.	Small lymphocytes.	Mononuclear leucocytes.	Large mononuclear. Vesicular nucleus.	Polynuclear. Vesicular nuclei.	Polynuclear. Compact nuclei.	Eosinophile.	
		6th	103·8°	158	18,000	12	44	16	8	..	..	..	..	..	..	Injected, fourth day, 400 im. u.; fifth day, 400 im. u. Died, ninth day—sepsis, pneumonia.
		7th	104·2	200	24,500	16	62	20	8	8	15	4	7	66	0	
		8th	105·0	210	23,000	20	36	46	10	0	15	9	7	67	0	
		9th	106·0	210	30,000	16	28	76	14	0	13	2	14	71	0	
9	2½ yrs.	8th	101·0	160	20,000	24	44	20	6	..	..	..	..	..	..	Condition good; thin membrane on tonsils; stenosis; intubation. Injected, eighth day, 720 im. u. Sixteenth day, tracheotomy; seventeenth day, pneumonia; eighteenth day, died. Passed from observation as having recovered.
		10th	102·5	160	13,000	4	42	6	8	0	19	21	0	60	0	
		12th	100·5	126	13,000	6	40	6	6	1	20	12	6	60	1	
10	1½ yr.	4th	104·8	146	18,500	22	40	12	2	5	25	9	6	55	0	Condition grave; small streaks on uvula palate, tonsils; stenosis; intubation Injected, third day, 700 im. u. Died —pneumonia.
		6th	102·0	180	28,500	26	34	50	8	2	9	13	9	67	0	
		8th	105·0	190	......	..	..	..	..	..	..	..	..	..	..	
11	1½ yr.	7th	101·2	136	23,500	..	.	..	..	12	13	3	6	65	1	Condition serious; thin membrane on tonsils; severe stenosis; intubation. Injected, seventh day, 500 im. u.; eighth day, 500 im. u. Died, eighth day, suddenly.
		40 min. after antitoxine.	.....	...	13,500	..	..	..	..	4	25	15	5	51	0	
		8th	104·4	160	......	..	..	..	..	..	..	..	..	..	..	
12	8 mos.	5th	101·0	130	35,500	22	110	10	4	0	14	5	3	78	0	Condition poor; pharynx, tonsils, bleeding, raw; small dots of membrane. Injected, fifth day, 1,000 im. u. Passed from observation. Cachexia; suppuration. Died, forty-first day.
		6th	100·0	130	27,500	12	70	24	4	16	13	2	6	64	0	
		7th	99·6	142	21,000	8	68	16	3	..	..	..	..	..	..	
13	1⅓ yr.	5th to	100·6	124	......	..	..	..	..	..	..	..	..	..	..	Condition fair; thin membrane on swollen tonsils. Injected, fifth day, 500 im. u.; seventh day, 500 im. u. Cachexia; cough; paralysis, palate. Died, twenty-eighth day.
		25th	102·0	140	......	..	..	..	..	..	..	..	..	..	..	
		26th	102·0	120	17,500	..	..	..	..	2	10	13	4	70	1	
		27th	104·6	160	30,500	..	..	..	..	0	8	17	8	66	1	
14	5 yrs.	4th	101·8	120	......	..	..	..	..	..	..	..	..	..	..	Condition grave; thick membrane on tonsils, uvula; nose obstructed; diffuse swelling of neck. Injected, fourth day, 500 im. u.; fifth day, 400 im. u. Died, sixth day, suddenly.
		5th	102·0	136	27,500	..	..	..	..	2	3	16	20	59	0	
		30 min. after antitoxine.	.....	...	13,000	..	..	..	..	3	10	10	9	68	0	
		6th	102·4	140	48,500	..	..	..	..	2	14	5	5	72	0	
15	1½ yr.	3d	102·0	186	......	..	..	..	..	..	..	..	..	..	..	Condition very grave; thin membrane, left tonsil; stenosis; intubation. Injected, third day, 250 im. u.; fourth day, 400 im. u., followed by antemortem (?) leucocytosis. Died, fourth day.
		4th	102·2	190	33,000	..	..	..	..	5	12	7	7	69	0	
		1 hr. after antitoxine.	.....	...	47,000	..	..	..	..	8	8	8	6	69	0	
16	1½ yr.	9th	102·0	160	......	..	..	..	..	..	..	..	..	..	..	Condition grave; thin membrane on tonsils; stenosis; intubation. Injected, ninth day, 500 im. u.; tenth day, 500 im. u. Pneumonia. Died, twenty-second day.
		10th	102·6	176	30,000	..	..	..	..	..	..	..	..	..	..	
		11th	103·0	144	24,000	..	..	..	..	16	30	6	4	44	0	
		10 min. after antitoxine.	.....	...	20,000	..	..	..	..	3	43	11	2	40	1	
		12th	101·0	132	18,500	..	..	..	..	10	39	3	4	43	1	
		14th	102·6	152	13,500	6	36	12	4	8	24	3	4	59	2	
		16th	103·2	154	18,500	8	42	24	6	3	11	10	5	71	0	
		18th	103·8	170	12,500	4	28	18	10	1	21	8	3	67	0	
		21st	104·0	190	11,000	16	0	28	12	10	25	3	4	58	0	
17	5 yrs.	6th	101·0	114	8,750	10	23	1	0	0	16	28	16	40	0	Condition good; very little thin membrane on tonsils, disappearing tenth day; Klebs-Loeffler cocci. Injected, eighth day, 600 im. u.; ninth day, erythema; tenth day, vomiting; fifteenth day, involuntary urine; twenty-third day, died—pneumonia.
		8th	101·2	108	12,000	20	28	2	2	2	13	16	8	61	0	
		40 min. after antitoxine.	.....	...	9,500	9	26	4	3	3	15	8	8	64	2	
		10th	99·6	128	13,000	6	42	4	3	3	5	6	4	82	0	
		14th	100·0	138	18,500	10	55	9	4	3	4	11	6	72	0	
18	4 yrs.	2d	101·0	150	......	..	..	..	..	..	..	..	..	..	..	Condition good; few thin streaks on tonsils; cervical nodes enormously swollen; Klebs-Loeffler absent on eighth day, cocci; albumin, five to ten per cent. Injected, second day, 800 im. u.; third day, 800 im. u.;
		3d	101·6	150	8,000	8	20	4	4	2	8	12	6	72	0	
		15 min. after antitoxine.	.....	...	6,250	3	14	8	5	0	10	9	1	78	2	
		5th	103·4	140	4,250	2	15	5	2	..	..	..	..	..	..	

No.	Age.	Day of disease.	Highest temperature.	Highest pulse.	LEUCOCYTES PER CUBIC MILLIMETRE.											Remarks.
					Total.	Per cent. in salt solution.				Per cent. in dry preparations.						
						Mononuclear.	Well-stained polynuclear.	Poorly stained polynuclear.	Amœboid figures.	Small lymphocytes.	Mononuclear leucocytes.	Large mononuclear. Vesicular nucleus.	Polynuclear. Vesicular nuclei.	Polynuclear. Compact nuclei.	Eosinophile.	
		6th	103·0	150	5,250	7	10	3	2	0	24	6	7	63	0	tenth day, urticaria; eleventh day, scarlet rash; greenish stools; stupor. Died, nineteenth day—pneumonia.
		8th	100·6	132	7,000	8	16	4	0	..	..	..	..	..	..	
		10th	102·6	140	13,000	4	36	12	2	0	5	7	8	80	0	
		12th	105·0	180	12,000	2	40	6	2	1	5	10	10	74	0	
		16th	105·0	176	25,000	6	76	20	4	2	9	6	12	70	1	
19	3 yrs.	6th	99·0	112	20,500	4	48	30	8	..	..	..	..	..	..	Condition serious; small amount of membrane on tonsils; stenosis severe; intubation; Klebs-Loeffler, staphylococci, and streptococci. Injected, sixth day, 1,000 im. u. Died—pneumonia.
		7th	102·4	146	16,500	16	40	10	6	1	13	6	2	72	1	
		8th	105·2	156	24,000	10	64	22	6	0	15	5	5	75	0	
		9th	106·4	...	......	..	..	..	..	..	..	..	..	..	..	
20	4½ yrs.	11th	99·8	124	33,000	..	..	..	..	..	..	..	..	..	..	Condition serious; small patch on left tonsil; stenosis; intubation. Injected, eleventh day, 1,000 im. u. Recovery.
		12th	102·0	128	33,000	20	104	8	4	8	6	7	7	72	0	
		13th	100·4	124	28,000	20	86	6	2	3	15	10	8	64	0	
		14th	99·0	120	15,000	6	46	6	2	..	..	..	..	..	..	
21	1½ yr.	3d	102·2	156	18,000	..	..	..	..	2	30	3	1	64	0	Condition fair; no visible membrane; large ulcer of cheek. Injected, third day, 1,000 im. u. Died, thirty-third day, pneumonia.
		10 min. after antitoxine.	.....	...	27,000	10	64	34	5	0	21	2	7	70	0	
		4th	102·6	150	15,000	24	24	12	3	14	24	5	2	66	0	
		6th	100·0	136	18,000	26	42	24	2	23	29	3	5	38	2	
		9th	99·6	140	11,500	16	20	10	2	..	..	..	..	..	..	
		11th	.....	...	13,000	16	30	6	0	4	5	9	2	72	2	
22	2 yrs.	4th	100·4	132	12,500	..	..	..	..	3	21	10	3	63	0	Condition serious; small patch on each tonsil; croupy cough. Injected, fourth day, 700 im. u.; fifth day, 500 im. u. Injection abscess. Eruptions; anæmia. Recovery.
		5th	104·6	160	30,000	..	..	..	..	4	5	11	7	70	2	
		40 min. after antitoxine.	.....	...	23,500	10	54	30	6	1	11	9	4	76	0	
		7th	101·0	160	26,500	12	82	10	8	0	14	9	3	72	3	
		9th	100·2	140	12,500	6	30	18	2	10	14	8	8	60	0	
		11th	101·6	140	26,000	20	64	16	6	..	..	..	..	..	..	
		13th	103·4	146	25,000	16	74	10	2	6	10	2	1	80	1	
		16th	101·0	130	12,750	18	54	24	6	7	24	4	3	59	3	
23	4½ yrs.	5th	100·4	148	30,500	16	54	22	10	..	..	..	..	..	..	Condition grave; no visible membrane; tonsils large; stenosis; intubation. Injected, fifth day, 1,000 im. u. Recovery.
		6th	100·4	160	24,000	6	68	22	8	4	17	7	1	70	1	
		7th	100·6	146	27,000	30	73	20	5	6	12	4	6	72	0	
		8th	99·2	114	17,500	9	36	29	8	0	6	12	7	74	0	
		10th	98·0	112	18,000	8	54	10	2	..	..	..	..	..	..	
		12th	98·4	100	22,000	10	78	4	0	0	6	10	5	83	2	
		13th	.....	...	21,500	6	68	8	2	0	8	11	2	79	0	
24	3 yrs.	15th	99·6	120	25,000	..	..	..	..	2	14	19	2	63	0	Condition fair; large patch on each tonsil, absent by thirteenth day; stenosis; intubation; Klebs-Loeffler bacillus absent after fourteenth day. Injected, eighth day, 700 im. u.; tenth day, 500 im. u. Recovery.
		16th	98·8	120	21,500	..	..	..	..	0	8	11	2	78	1	
		18th	98·6	120	23,500	..	..	..	..	10	4	8	2	76	0	
		20th	99·6	130	26,500	..	..	..	..	11	6	4	6	73	0	
		22d	99·6	120	21,000	..	..	..	..	..	..	..	..	..	..	
		26th	.....	...	27,500	8	74	28	10	12	8	4	5	72	1	
		29th	98·8	120	24,000	10	74	14	4	1	25	11	4	55	4	
25	5 yrs.	4th	101·0	130	......	..	..	..	..	..	..	..	..	..	..	Condition fair; small patch on membrane of each tonsil; moderate stenosis. Injected, fifth day, 500 im. u. Recovery.
		5th	100·4	120	18,000	..	..	..	..	4	14	14	6	62	0	
		30 min. after antitoxine.	.....	...	13,500	..	..	..	..	4	11	13	3	69	0	
		70 min. after antitoxine.	.....	...	14,000	..	..	..	..	..	..	..	..	..	..	
		6th	99·8	110	20,000	..	..	..	..	5	23	7	1	64	0	
		8th	99·2	108	10,500	..	..	..	..	7	14	2	3	72	2	
		10th	98·0	96	15,500	..	..	..	..	19	3	4	2	68	4	
		12th	99·0	99	18,000	..	..	..	..	..	..	..	..	..	..	
		19th	99·6	100	10,000	8	24	8	1	0	15	9	2	73	1	
26	7 yrs.	3d	99·8	128	10,500	..	..	..	..	0	12	20	6	62	0	Condition good; no visible membrane; Klebs-Loeffler cocci. Injected, third day, 500 im. u. Recovery.
		30 min. after antitoxine.	.....	...	7,000	..	..	..	..	8	5	9	4	75	0	
		70 min. after antitoxine.	.....	...	7,000	..	..	..	..	..	..	..	..	..	..	
		4th	99·6	100	19,800	..	..	..	..	8	11	11	1	69	0	
		6th	98·6	100	9,800	..	..	..	..	6	22	6	2	62		

No.	Age.	Day of disease.	Highest temperature.	Highest pulse.	LEUCOCYTES PER CUBIC MILLIMETRE.											Remarks.
						Per cent. in salt solution.				Per cent. in dry preparations.						
					Total.	Mononuclear.	Well-stained polynuclear.	Poorly stained polynuclear.	Amœboid figures.	Small lymphocytes.	Mononuclear leucocytes.	Large mononuclear. Vesicular nucleus.	Polynuclear. Vesicular nuclei.	Polynuclear. Compact nuclei.	Eosinophile.	
27	2 yrs.	3d	101·8°	122	7,750	6	18	7	0	..	..	..	..	..	..	Condition grave; thin streaks on tonsils; fourth day, condition precarious; sixth day, condition good. Injected, third day, 500 im. u. Recovery.
		4th	102·8	156	9,800	2	20	16	0	5	23	9	3	60	0	
		5th	100·2	140	13,000	10	22	20	4	6	29	11	2	52	0	
		6th	100·2	136	11,500	14	23	4	3	5	36	7	2	49	1	
		10th	100·0	104	16,500	20	39	5	1	2	26	6	4	62	2	
		12th	100·4	128	12,000	4	40	4	0	..	..	..	..	..	..	
28	2½ yrs.	5th	101·2	130	......	..	..	..	..	..	..	..	..	..	..	Condition grave; nose occluded; membrane at anterior nares; gangrenous odor; membrane on tonsils and pharynx; tenth day, scarlatinoid rash; fourteenth day, general desquamation. Injected, fifth day, 700 and 500 im. u.; sixth day, 700 im. u. Recovery.
		6th	104·2	170	25,000	..	..	..	..	17	11	7	6	59	0	
		9th	102·6	130	23,500	..	..	..	..	4	20	8	6	58	4	
		10th	101·0	108	14,000	..	..	..	..	23	8	7	5	51	4	
		11th	100·4	124	23,500	6	54	34	2	17	4	4	1	72	2	
		13th	103·6	120	17,500	2	46	22	2	1	6	10	2	79	2	
		20th	101·0	120	21,500	8	68	10	1	1	20	10	4	64	1	
29	7 yrs.	5th	101·0	122	......	..	..	..	..	..	..	..	..	..	..	Condition grave; thick membrane on uvula, tonsils, and pharynx, appearing at anterior nares; absent on fifteenth day; Klebs-Loeffler streptococci. Injected, fifth day, 700 im. u.; sixth day, 700 im. u. Albumin, five to ten per cent. Recovery.
		6th	100·0	130	26,000	..	..	..	..	8	12	2	4	72	2	
		7th	100·4	144	35,500	..	..	..	..	5	13	8	7	66	1	
		8th	99·8	144	21,000	..	..	..	..	2	11	9	1	76	1	
		9th	99·0	108	16,500	..	..	..	..	18	8	6	8	60	0	
		11th	99·0	100	18,000	..	..	..	..	..	..	..	..	..	..	
		13th	99·0	98	24,500	..	..	..	..	8	20	6	9	57	0	
		15th	99·0	...	25,000	..	..	..	..	6	7	16	6	66	0	
		22d	98·0	...	10,000	..	..	..	..	2	10	7	4	72	3	
30	3½ yrs.	6th	102·4	152	25,000	..	..	..	..	4	10	8	2	78	0	Condition very grave; gangrenous patches on tonsils and uvula; Klebs-Loeffler streptococci, etc.; moderate stenosis; neck swollen. Injected, fifth day, 500 im. u.; seventh day, 500 im. u. Recovery.
		8th	102·4	136	20,000	..	..	..	..	3	6	10	6	75	0	
		10th	100·0	120	16,500	..	..	..	..	7	2	4	4	83	0	
		12th	99·8	110	25,000	..	..	..	..	4	10	8	2	75	1	
		14th	100·0	144	20,500	..	..	..	..	10	6	2	4	75	3	
		18th	99·0	...	17,500	20	34	16	0	..	..	..	..	..	..	
		22d	98·6	...	12,000	12	34	2	0	..	..	..	..	..	..	
31	4½ yrs.	3d	100·6	152	18,500	..	..	..	..	6	12	8	1	73	0	Condition serious; thick membrane on tonsils, absent on eighth day; Klebs-Loeffler streptococci, tenth day. Injected, second day, 500 im. u. Recovery.
		5th	100·5	124	22,000	..	..	..	..	8	5	5	0	82	0	
		7th	98·4	100	15,000	..	..	..	..	5	16	16	3	57	3	
		9th	98·0	92	16,000	..	..	..	..	5	9	5	5	70	1	
		13th	98·0	88	13,500	20	34	2	0	..	..	..	..	..	..	
32	2 yrs.	24th	100·0	128	12,500	..	..	..	..	7	17	18	1	58	0	Condition serious; no visible membrane; extreme stenosis; intubation; tracheotomy; cachexia; albumin, ten per cent.; Klebs-Loeffler persisting. Injected, seventh day, 500 im. u.; eighth day, 500 im. u.; thirty-seventh day, injection abscess. Recovery.
		25th	.....	...	16,000	..	..	..	..	6	9	21	2	62	0	
		27th	101·8	...	18,500	..	..	..	..	2	3	10	2	80	1	
		30th	.....	...	23,000	..	..	..	..	1	1	9	3	85	1	
		32d	99·4	...	35,000	..	..	..	..	16	5	1	6	70	1	
		33d	101·0	...	21,000	..	..	..	..	..	..	..	..	..	..	
		37th	100·0	...	17,500	4	62	4	0	3	11	3	2	82	0	
		39th	101·8	...	9,000	6	24	6	2	..	..	..	..	..	..	
		48th	99·6	...	15,500	14	46	2	0	..	..	..	..	..	..	
33	8 yrs.	5th	102·6	122	31,500	..	..	..	..	1	8	17	3	71	0	Condition serious; thick patch on one tonsil till thirteenth day; neck swollen; albumin, fifteen to twenty per cent. Injected, fourth day, 400 im. u.; fifth day, 400 im. u. Recovery.
		7th	99·6	120	7,000	..	..	..	..	1	15	14	0	70	0	
		10th	99·0	112	12,000	..	..	..	..	4	4	7	3	82	0	
		12th	100·4	110	15,000	..	..	..	..	..	..	..	..	..	..	
		15th	100·2	100	17,500	..	..	..	..	8	10	8	2	72	0	
		20th	99·0	120	9,800	14	24	0	0	5	12	3	1	78	0	
34	2½ yrs.	6th	100·0	140	22,500	..	..	..	..	9	11	13	6	59	2	Condition fair; distinct patch on each tonsil until ninth day; Klebs-Loeffler until twenty-eighth day. Injected, sixth day, 500 im. u. Recovery.
		8th	100·0	130	15,000	..	..	..	..	0	4	13	11	71	1	
		10th	102·0	120	17,000	..	..	..	..	10	27	6	4	56	2	
		12th	100·2	120	22,000	..	..	..	..	12	22	6	2	58	2	
		16th	100·2	120	12,500	..	..	..	..	4	16	7	5	67	1	
35	4 yrs.	8th	99·6	116	16,000	..	..	..	..	5	9	10	7	68	0	Condition good; thin patches on tonsils till seventeenth day; Klebs-Loeffler till seventeenth day; albumin, five to twenty-five per cent. Injected, eighth day, 100 im. u. Recovery.
		10th	99·0	100	12,500	..	..	..	..	8	6	7	1	78	0	
		12th	99·0	98	11,000	..	..	..	..	8	16	8	4	64	0	
		18th	98·6	96	10,500	6	36	0	0	8	11	3	5	73	0	
36	1½ yr.	7th	100·8	124	......	..	..	..	..	..	..	..	..	..	..	Condition serious; no visible membrane; severe stenosis; intubation; scarlatinoid rash. Recovery.
		8th	101·4	170	33,500	..	..	..	..	9	11	14	8	57	1	
		10 min. after antitoxine.	.....	...	26,500	..	..	..	..	20	12	1	7	60	1	
		9th	104·2	164	35,500	..	..	..	..	..	..	..	..	..	..	

No.	Age.	Day of disease.	Highest temperature.	Highest pulse.	LEUCOCYTES PER CUBIC MILLIMETRE.											Remarks.
						Per cent. in salt solution.				Per cent. in dry preparations.						
					Total.	Mononuclear.	Well-stained polynuclear.	Poorly stained polynuclear.	Amœboid figures.	Small lymphocytes.	Mononuclear leucocytes.	Large mononuclear. Vesicular nucleus.	Polynuclear. Vesicular nuclei.	Polynuclear. Compact nuclei.	Eosinophile.	
37	2½ yrs.	11th	99·2°	120	14,250	14	32	11	3	3	16	9	7	62	3	Condition good; thin secondary membrane on uvula and tonsils till fifteenth day; albumin, ten per cent. Injected, tenth day, 300 im. u. Recovery.
		12th	99·0	116	10,000	8	26	6	0	..	..	..	..	..	..	
38	12 yrs.	9th	99·6	98	10,000	8	24	8	0	..	..	..	..	..	..	Condition good; no visible membrane; Klebs-Loeffler cocci. Injection omitted. Recovery.
		11th	98·6	72	16,000	16	38	8	2	12	20	7	3	58	0	
39	6 yrs.	4th	101·2	126	41,500	18	62	82	30	1	5	6	4	84	0	Condition grave; membrane on tonsils and uvula; severe stenosis; intubation; Klebs-Loeffler cocci. Injected, fourth day, 1,200 im. u. Recovery.
		40 min. after antitoxine.	.....	...	25,000	3	70	28	12	1	5	2	3	89	0	
		5th	103·2	140	......	..	..	..	..	..	..	..	..	..	..	
40	15 yrs.	2d	101·2	96	23,500	10	70	14	0	1	10	5	3	81	0	Condition good; much thick membrane over pharynx; Klebs-Loeffler cocci. Injected, 1,200 im. u. Recovery.
		30 min. after antitoxine.	.....	...	20,500	4	72	7	0	2	10	4	3	81	0	
41	28 yrs.	2d	102·5	120	17,500	2	52	12	2	0	4	12	6	78	0	Condition good; many small patches on tonsils. Injected, second day, 1,200 im. u. Recovery.
		30 min. after antitoxine.	.....	...	10,000	6	28	6	0	0	5	7	3	85	0	
		3d	103·0	118	......	..	..	..	..	..	..	..	..	..	..	
42	50 yrs.	3d	102·6	96	25,000	22	151	32	6	2	7	8	3	80	0	Condition fair; large patch on tonsils and uvula until sixth day; Klebs-Loeffler till thirteenth day. Injected, second day, 600 im. u.; third day, 600 im. u. Recovery.
		4th	101·2	96	14,500	16	24	18	4	4	16	8	2	70	..	
		6th	99·6	100	14,500	24	24	10	2	..	..	..	..	..	..	
		8th	100·8	90	11,000	16	28	0	0	..	..	..	..	..	..	
43	19 yrs.	3d	102·2	100	46,000	..	..	..	..	10	9	4	9	64	4	Condition good; large patch on right tonsil; tonsils much swollen. Injected, third day, 600 im. u. Recovery.
		5th	101·0	102	12,000	..	..	..	..	3	7	8	7	75	0	
		7th	100·4	88	14,000	..	..	..	..	7	3	0	0	88	2	
		10th	99·4	84	10,500	..	..	..	..	..	..	..	..	..	..	
44	22 yrs.	5th	100·0	114	......	..	..	..	..	..	..	..	..	..	..	Condition good; small patches on tonsils; moderate general hyperæmia. Injected, sixth day, 600 im. u. Recovery.
		6th	99·8	100	22,000	..	..	..	..	4	6	8	2	80	0	
		8th	98·0	104	16,500	..	..	..	..	6	8	11	8	64	2	
		10th	98·0	90	16,000	..	..	..	..	..	..	..	..	..	..	
		12th	98·0	80	13,000	..	..	..	..	8	26	7	0	57	2	
45	19 yrs.	4th	101·0	110	14,000	..	..	..	..	6	10	17	6	61	0	Condition good; thin membrane on left tonsil; much general hyperæmia; Klebs Loeffler cocci till eleventh day. Injected, 200 im. u. Recovery.
		30 min. after antitoxine.	.....	...	11,500	..	..	..	..	6	5	14	3	72	0	
		5th	100·8	108	10,000	4	30	6	0	..	..	..	..	..	..	
		7th	100·8	96	11,000	6	36	2	2	1	21	3	3	72	0	
46	19 yrs.	5th	99·4	100	5,500	2	16	4	1	16	24	10	0	50	0	Condition good; no visible membrane. Injected, fifth day, 200 im. u. Recovery.
		45 min. after antitoxine.	.....	...	4,000	4	10	2	1	16	12	0	0	68	2	
		6th	.....	...	4,000	4	8	4	0	..	..	..	..	..	..	
		8th	.....	...	7,500	8	16	6	0	4	28	12	0	60	0	
47	17 yrs.	5th	100·0	110	13,500	..	..	..	..	1	2	21	0	76	0	Condition good; irregular streaks on tonsils. Injected, third day, 400 im. u. Recovery.
		7th	99·0	96	20,000	..	..	..	..	8	4	20	2	66	0	
		10th	98·0	80	18,000	..	..	..	..	5	11	16	0	67	0	
48	23 yrs.	6th	101·8	100	8,250	6	21	6	2	6	15	6	10	53	0	Condition good; large patch on each tonsil till ninth day; much hyperæmia. Injected, sixth day, 200 im. u. Recovery.
		9th	100·2	110	8,500	6	28	0	0	0	10	13	5	71	1	
49	22 yrs.	4th	104·0	124	10,500	8	32	2	2	2	6	3	5	84	0	Prostration moderate; no visible membrane on tonsils and palate; very hyperæmic, swollen. Injected, fourth day, 125 im. u. Recovery.
		30 min. after antitoxine.	.....	...	11,000	6	41	0	0	0	4	4	5	87	0	
		5th	100·0	92	9,000	2	30	4	4	3	9	10	4	73	1	
50	24 yrs.	6th	99·6	80	9,800	..	..	..	..	..	..	..	..	..	..	Prostration slight; large patch on each tonsil. Injected, fifth day, 400 im. u. Recovery.
		9th	99·0	80	7,000	..	..	..	..	..	..	..	..	..	..	

No.	Age.	Day of disease.	Highest temperature.	Highest pulse.	LEUCOCYTES PER CUBIC MILLIMETRE.											Remarks.
						Per cent. in salt solution.				Per cent. in dry preparations.						
					Total.	Mononuclear.	Well-stained polynuclear.	Poorly stained polynuclear.	Amœboid figures.	Small lymphocytes.	Mononuclear leucocytes.	Large mononuclear. Vesicular nucleus.	Polynuclear. Vesicular nuclei.	Polynuclear. Compact nuclei.	Eosinophile.	
51	24 yrs.	7th	103·6°	110	8,000	4	26	2	4	6	6	11	1	75	0	Prostration moderate; membrane exfoliated. Injection omitted. Recovery.
		8th	103·2	100	8,500	4	28	2	2	..	..	..	..	..	..	
52	28 yrs.	6th	101·0	100	14,000	14	42	0	2	7	12	7	1	72	1	Prostration slight; small patch of membrane on tonsils. Injection omitted. Recovery.
53	24 yrs.	4th	99·0	80	5,000	8	12	0	0	..	..	..	..	..	..	Prostration slight; small patches on both tonsils. Injected, fourth day, 125 im. u. Recovery.

Experiments with Serum Injections.—The following experiments were undertaken to determine the effect of normal animal serum, of normal serum and camphor, and of antitoxine upon the leucocytes of normal rabbits.

The antitoxine produced immediate hypoleucocytosis, which varied with the strength of the serum. Normal serum, with or without camphor, caused a very slight reduction of leucocytes, or failed entirely to affect the blood.

Effect of Serum Injections on Leucocytes of Normal Rabbits.

I. Normal Serum.

No.	LEUCOCYTES TO THE CUBIC MILLIMETRE.								Injection.
	Before injections.	After injections.							
		15 minutes.	30 minutes.	40 minutes.	4 hours.	12 hours.	24 hours.	48 hours.	
1	12,750	.....	10,250	.....	.....	.....	.....	.....	2·5 c. c. sheep's serum.
2	12,250	.....	13,500	.....	.....	.....	.....	.....	" " "
3	11,000	.....	9,750	.....	.....	.....	.....	.....	" " "

II. Normal Serum and Camphor.

No.	Before injections.	15 minutes.	30 minutes.	40 minutes.	4 hours.	12 hours.	24 hours.	48 hours.	Injection.
1	10,500	.....	9,750	.....	.....	.....	.....	.....	2·5 c. c. sheep's serum.
2	11,750	.....	11,250	.....	.....	.....	.....	.....	" " "
3	12,000	.....	10,500	.....	.....	.....	.....	.....	" " "

III. Antitoxine.

No.	Before injections.	15 minutes.	30 minutes.	40 minutes.	4 hours.	12 hours.	24 hours.	48 hours.	Injection.
1	9,500	5,000	5,000	6,000	5,500	.....	.....	9,400	2·5 c. c. 50 Behring units intravenously.
2	12,500	7,000	7,400	6,400	.....	.....	.....	.....	2·5 c. c. 50 im. u. subcutaneously.
3	12,000	.....	9,400	6,000	.....	.....	5,200	.....	" " " "
4	10,400	.....	7,400	.....	.....	5,800	.....	.....	" " " "

Experiments with Injections of Diphtheria Cultures.—In four rabbits an attempt was made to produce the change in the staining qualities of the leucocytes such as was observed in clinical diphtheria.

For this purpose the animals received a subcutaneous injection of broth cultures of diphtheria, two or four days old, and one fortieth of a cubic centimetre of which killed a two-hundred-and-seventy-gramme guinea-pig in forty-eight hours. The attempt was only partially successful. While an increase in the numbers of stainless leucocytes was noted continuously up to the death of the animals, the appearance of these cells did not perfectly resemble that of the stainless leucocytes found in the human subject. Such a result is, however, to be expected in view of the great difference in the conditions produced by such injections from those found in severe cases of pharyngeal diphtheria.

In one rabbit which survived, the staining reaction of the leucocytes was well restored after powerful doses of antitoxine.

Effect on Rabbits of Subcutaneous Injections of Virulent Cultures of Diphtheria.

No.	Date.	LEUCOCYTES EXAMINED IN SALT SOLUTION.						Treatment.
		Total.	Small uninuclear.	Large uninuclear.	Well-stained multinuclear.	Poorly stained multinuclear.	Amœboid figures.	
1	March 14th, before injection.	13,000	23	5	23	1	3	1 c. c. culture, two days old.
	March 15th.	9,000	10	2	23	1	4	
	March 16th.	13,500	5	8	36	5	4	2·5 culture, four days old.
	March 17th.	13,750	8	4	38	5	5	2·5 culture, two days old.
	4 hours after injection.	11,750	7	1	24	15	5	50 im. u. (Behring) antitoxine.
	35 minutes after antitoxine. .	6,250	4	1	8	12	3	

No.	Date.	LEUCOCYTES EXAMINED IN SALT SOLUTION.						Treatment.
		Total.	Small uninuclear.	Large uninuclear.	Well-stained multinuclear.	Poorly stained multinuclear.	Amœboid figures.	
	March 18th	53,250	6	0	132	22	12	Multinuclears all paler.
	3 hours later	35,750	3	0	68	36	10	Ante mortem.
2	March 14th, before injection.	12,000	23	3	21	1	2	1·5 c. c. culture, two days old.
	5 minutes later	8,750	17	7	8	3	0	
	5 hours later	7,000	4	2	24	1	2	
	March 15th	8,250	11	2	15	5	2	2·5 c. c. culture, four days old.
	March 16th	12,000	16	3	21	8	3	2 c. c. culture, four days old.
	March 17th	20,000	15	3	50	12	7	
	March 18th	22,750	18	3	55	15	6	2 c. c., two days old.
	March 19th	55,250	28	0	112	81	17	Died, March 20th.
3	March 18th, before injection.	13,000	20	7	24	1	1	2 c. c., two days old.
	March 19th	11,500	5	7	23	11	0	
	March 20th	9,000	13	6	17	6	2	2 c. c., four days old.
	4 hours later	14,500	16	0	26	16	4	2 c. c. 40 im. u. antitoxine.
	30 minutes after antitoxine.	10,750	12	1	22	8	4	
	March 21st.	27,500	42	2	47	19	6	
	P. M.	43,250	47	1	109	16	6	2 c. c. 300 im. u. antitoxine.
	30 minutes after antitoxine.	33,500	19	7	107	11	5	
	March 22d.	40,000	4	2	104	52	15	2 c. c. 300 im. u. antitoxine.
	35 minutes after antitoxine.	24,500	10	4	40	44	3	
	4 hours after	19,250	7	1	52	17	2	2 c. c., two days old.
	March 23d.	36,000	6	3	101	34	7	Leucocytes well stained. Recovery.
4	March 18th, before injection.	9,250	13	5	19	0	0	2·5 c. c. culture, two days old.
	March 19th	8,250	4	6	20	3	0	
	March 20th	11,500	3	2	40	1	3	2 c. c., four days old.
	March 21st.	11,000	10	0	24	10	4	
	March 22d.	21,500	6	4	36	40	23	2 c. c. 300 im. u. antitoxine.
	30 minutes after antitoxine.	10,000	5	1	16	18	5	2 c. c. culture, four days old.
	March 23d.	25,000	2	4	42	52	20	Died, March 26th.

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FOREIGN BODIES IN THE ŒSOPHAGUS:

SPECIALLY CONSIDERED FROM THE POINTS OF VIEW OF SYMPTOMATOLOGY AND MORBID ANATOMY.*

By HARRISON ALLEN, M. D.,

PHILADELPHIA.

An inquiry, now completed, into the symptoms of foreign bodies in the œsophagus had its origin in a desire on my part to know something of these accidents from original sources. While highly appreciating the value of the monographs which have appeared on the subject, I allude particularly to the writings of Hévin (*Mém. de l'Acad. roy. de chir.*, 1761, vol. i, 444), Adelmann (*Prager Vierteljahrsbuch f. prakt. Heilkunde*, xcvi, 66), Poulet (*A Treatise on Foreign Bodies in Surgical Practice*, English translation, Wood & Co., 1880), and König (*Deutsche Chirurgie*, Lieferung 35, 1880), and being grateful, as all clinicians must be, for the admirable *résumés* of Morell Mackenzie (*Diseases of the Throat*, vol. ii, p. 190, American edition) and John O.

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* Read before the American Laryngological Association at its seventeenth annual congress.

Roe (*System of the Diseases of the Ear, Nose, and Throat*, vol. ii, p. 500; edited by C. H. Burnett). I found that the analysis of available cases yielded conclusions which surprised me, and I hope that these may be found worthy of the attention of others. Let me here thankfully acknowledge the aid the *Index-Catalogue of the Library of the Surgeon General's Office* has given me. This splendid work now enables the student to apply a literary method to the description of diseases and effects of injuries. I am aware that this manner of conducting medical research is not highly thought of, yet it happens to be a useful one, and in this instance at least the only one that will serve. The results of humble labors may be as acceptable as those in which brilliant powers are engaged.

The entire number of cases analyzed is eighty-two.*

A foreign body descending the entire length of the œsophagus (all bodies tending so to do) may develop symptoms owing to pressure or to direct lesion in one of the four regions to be named, or the body in passing may excite trouble in all. In illustration of this statement the following case is herewith abridged: A man, aged twenty-seven, swallowed a piece of glass while drinking beer; there immediately ensued sharp pain in the region of the larynx with slight hæmorrhage; an hour after this a cough was developed and great difficulty in swallowing solid food. Liquid food was taken, but subsequently vomited. On the second day suffocative feelings were noted. Occasional attacks of vomiting and pain in the region of the neck continued for three months; in the fifth month a swelling occurred on the right side of the chest over the clavicle. A short time afterward epigastric pains were complained of which prevented the patient from walking upright. In the ninth month an abscess formed in the skin of the abdomen and epigastric region which, being opened, was found to contain the offending body. The patient recovered (L. Henry).

Clinicians make no distinction between foreign bodies lodged in the laryngopharynx and those in the upper part of the œsophagus. While on anatomical grounds such a course can be criticised, it remains true that a foreign body lodged in the tract named is, in its main features, as though it were lodged in the upper part of the œsophagus itself. In the first place, the foreign body is out of sight, and at least by one symptom—namely, the enormous amount of mucous outflow—is quite like that of the body lodged back of the larynx or in the beginning of the œsophagus. The symptoms, such as cough, dyspnœa, etc., are precisely those of a body lodged farther down. We can say that a clinical region exists embracing the lower pharynx (laryngopharynx) and the œsophagus behind the larynx. It is evident, for example, that dyspnœa (choking and strangling) is a symptom due to pressure of the foreign body forward, and either narrowing or obliterating the lumen of the trachea or, by exciting muscular spasm, even of the larynx. Dyspnœa is less noticeable when the foreign body has passed from the neck and has entered the thorax. While the danger of pressure against the vessels arising from the descending aorta and from the left side of the arch of the aorta is increased, the foreign body may even slip to the right side and enter the right pleural sac. The region where the gullet is crossed by the left bronchus is a fertile locality for bodies to be lodged,* and secure entrance into the trachea by ulceration due to inflammation and pressure. Finally, when the body lies between the left bronchus and the cardiac end of the œsophagus, entire absence of pressure effects is noted, but in their place ulceration of the œsophageal wall and resulting hæmorrhage from the œsophageal arteries or the descending aorta occur. From these considerations it is tenable that the interpretation of symptoms depends in great measure upon a correct understanding of the anatomy of the regions through which the œsophagus passes. Four of these regions may be recognized—namely:

1. The lower part of the pharynx and region back of the larynx.
2. The portion in the neck between the larynx and the sternal notch.
3. The portion in the chest between the sternal notch and the point of crossing of the trachea by the left bronchus.
4. The portion between the left bronchus and the cardiac end.

In a dissection made with reference to determining the relations of the œsophagus, I make the following note: The left common carotid artery lies on the left side of the trachea two inches above the bifurcation; the aorta, crossing in front of the trachea and descending on the left side, is peculiarly disposed to hold a foreign body. Both the common carotid artery and the aorta tend to support the left side of the œsophagus, while on the right side there is no such support, the œsophagus projecting slightly to the right of the trachea and lying directly against the pleura.

The study of the literature of foreign bodies in the œsophagus is, alas! a phase of necrology. Let us hope that the experience of practitioners is more favorable than would appear from the series just completed. It must be remembered that many cases have been reported because of a fatal issue or from the necessity occurring for the performance of œsophagotomy.

The following divisions of the subject will be employed:

1. Spasmodic constriction of the œsophagus, regurgitation of food, and softening of the œsophageal walls.
2. Emphysema.
3. Interference with respiration, cough, etc.
4. Excessive mucous secretion.
5. Nausea and vomiting.
6. Hæmorrhage.
7. Anxiety.

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* The entire number of titles in the surgeon general's catalogue is three hundred and forty-six. Many of these were rejected as unsuited. Some were in languages I could not read, others were recorded in books which were unattainable in Philadelphia. The cases will always be referred to by the name of the author, since the title and reference can be easily found in the catalogue.

* I called attention to this fact in a paper entitled Localization of Diseased Action in the Œsophagus (*Philadelphia Medical Times*, 1877–'78, viii).

8. Abscess.
9. Emission of air from the œsophagus.
10. Pain.
11. Convulsions.
12. Syncope.
13. Miscellaneous.

1. *Spasmodic Constriction.*—Not only are the circular muscle fibres of the œsophagus disposed to contract over the obstructing body, but a similar disposition is often recognized in the fibres for a short distance both above and below it. This liability exists to a more marked degree in the position last named, and the likelihood of its occurrence must always be remembered. Even if the shape of the body is favorable to recovery, the presence of a distal constriction makes it difficult for spontaneous descent and dangerous for the physician to make downward pressure with the probang. Indeed, the introduction of any instrument may excite spasm in the circular fibres (Blair).

The constriction of the œsophagus is doubtless the cause of regurgitation of food. In young subjects especially, the violent regurgitation following impaction of the œsophagus is characteristic. This fact is not mentioned by any of the monographers. In a case of McLean's, of a child of sixteen months, violent regurgitation of food (not vomiting) was the first symptom that attracted the attention of the nurse. A penny had completely obstructed the passage. The coin was removed and the patient recovered. The same observer remarked regurgitation in a woman, aged thirty-six years, who swallowed a rubber plate with artificial teeth.

If the observer notes the short time that has often elapsed between the date of the accident and the formation of an abscess or ulceration, it is evident that softening of the walls of the œsophagus can occur with alarming rapidity.*

The œsophagus offers feeble resistance to the effects of traumatic inflammation. This is due to a fundamental fact that the canal is one for quick transit. The single provision made for the retention of the foreign body is that of constriction of the circular fibres; but this occurrence in the end increases the rapidity with which inflammatory softening occurs. Fabrice narrates the case of a laborer, aged twenty-six, who swallowed a piece of bone. He died on the fifth day. The bone was found at the autopsy lodged "at the end of the first half of the œsophagus." A perforating ulcer was noted in the posterior wall, the aorta was perforated at the arch, and the pericardium was inflamed.

2. *Emphysema.*—Emphysema was found in twelve examples out of the entire number, thus constituting fifteen per cent.; yet Mackenzie does not allude to it among the symptoms. Poulet states that emphysema as a primary symptom is rare, and knows of but one example. Busch claims that emphysema is due to vomiting, and is in all instances associated with perforation of the œsophagus. According to Broca and Weinlechner, emphysema is apt to occur at the junction of the œsophagus and pharynx. Crequi, Broca, Demarquay, and Osler describe it as occurring in examples where the foreign body was lodged at the junction of the œsophagus and pharynx, or just behind the cricoid cartilage. Gussenbauer found it in an instance where the foreign body was lodged behind the hyoid bone. The existence of emphysema is of varying significance. It is often found in cases which end fatally, while it is never the exciting cause of death. The symptom, therefore, does not imply that the patient is in a grave condition. Thus, Demarquay cites a case of a young woman who swallowed a fish bone; emphysema came on within two hours after the removal of the bone, yet the patient recovered. Morgan gives the facts in a case of a woman of forty-five years of age, in whom on the second day after swallowing a piece of rib, which constricted the œsophagus, emphysema occurred throughout the neck and the upper part of the chest; the foreign body was pushed into the stomach, the emphysema disappeared, and the patient recovered. It must be acknowledged, however, that in most instances in which emphysema is noticed a mortal result ensues. In Broca's case, a male idiot, aged twenty-seven, who swallowed a piece of rib with flesh attached, emphysema ensued immediately, and the patient died in twenty-four hours. Crace notes the case of a child, five years of age, who swallowed a coin; emphysema occurred forty-eight hours afterward, the child dying on the fifth day. The coin had done much mischief: it had entered the sheath of the vessels on the left side and dissected from each other the carotid artery and pneumogastric nerve. In Demarquay's case excessive pus infiltration was present in the neck, extending from the skull to the fifth dorsal vertebra and passing thence into the right pleural cavity. It may be said that the presence of emphysema in any group of foreign bodies other than those behind the larynx is rare. Richet found emphysema occurring on the second day in a man who swallowed a set of artificial teeth. The patient died on the fourth day. The plate was found lodged behind the first joint of the sternum. Since the occurrence of emphysema was not immediate, and the body is not described as having rested behind the larynx, it is fair to assume that the entrance of air in the tissues occurred at the point at which the plate was found after death. In another case a man swallowing a bone died on the second day; the bone was found in the posterior mediastinum. Related to the subject of emphysema, and yet not properly belonging to the account of foreign bodies, is a case of McLean's of a man, thirty years of age, upon whom œsophagotomy was performed. Emphysema occurred in the lips of the wound, the patient dying in forty-eight hours (Thomson).

On the whole, it will be seen that the symptom of emphysema is one of more than passing interest. It usually occurs when foreign bodies are lodged back of the hyoid bone; yet it is not impossible for the lesion exciting emphysema to be located at other parts of the œsophagus. It is in every way probable that the point at which air for the most part enters the tissues is that which is the weakest part of the canal—namely, at the place where the circular set of muscular fibres unites with those of the pharynx.

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* Blondeau (*Thèses de l'École de méd.*, 1830, ii) narrates the case of a man who, in order to escape detection for theft, swallowed some coins wrapped in a piece of linen. The chances for the coins to pass were greatly diminished by the circumstance that they were thus covered with linen cloth. The walls of the œsophagus underwent inflammatory softening, with the resultant death of the patient

3. *Interference with Respiration, Cough, etc.*—The symptoms referable to the respiratory organs are intricate and important. A large body lodged behind the larynx and upper part of the trachea will induce immediate dyspnœa or even apnœa. The occurrence of such symptoms is conclusive either that the foreign body is large enough to force the anterior wall of the trachea forward, thus making absolute occlusion, or, as when the body lies back of the pharynx, to make such forward pressure as to excite laryngeal spasm. Blair relates an instance in which spasm ensued each time a probang was passed. Doubtless in this case the probang itself added to the distention to a degree sufficient to cause the condition named. As a rule, cough is induced by forward pressure of the foreign body so as to excite the mucous lining of the trachea and cause it to pour out an excess of mucus. Bousquet reports this symptom as occurring three weeks after a piece of bone was lodged in the cardiac end of the œsophagus; the case proved fatal a week afterward, by ulceration of the descending aorta.

R. Brown reports a case of a woman, sixty-two years of age, who, after swallowing a piece of bone, had chronic cough for eight months, which ended in the violent evulsion of the offending body. Cauchois found in a woman, twenty-seven years of age, in whom a piece of bone was lodged behind the cricoid cartilage and four upper rings of the trachea, asthmatic cough, hoarseness, and attacks of dyspnœa for five months; the case resulted fatally. The body was found after death lodged in the anterior wall of the œsophagus. Mees reports a case of a child who swallowed a steel screw; death ensued on the third day; cough was a conspicuous symptom. Occasional suffocative attacks with dyspnœa also occurred. The screw was found after death on the level of the first joint of the sternum; it must have exerted great pressure forward against the trachea. May reports the case of a boy, seven years of age, who after swallowing a half-penny suffered from cough for three years associated with attacks of dyspnœa; the coin was afterward ejected and the patient recovered.

Pressure against the larynx exciting secondary cough after the subsidence of the primary symptoms is not to be confounded with cough as a primary result of excitation of the larynx, as when a fish bone is lodged behind the cricoid cartilage or directly exciting the arytænoid region (Cheever). A strident cough may be a permanent symptom and, unlike aphonia, be succeeded by morbific conditions.

Aphonia appears to be confined to females, and has no connection either with the position or the nature of the foreign body. It is doubtless reflex in origin. A piece of flesh and bone lodged back of the larynx in a woman, aged eighteen years, excited this condition primarily (Crache). In a woman, aged fifty-four years, a piece of pork lodged in the upper part of the œsophagus caused aphonia. Verneuil found that aphonia may be produced by a needle which was lodged in the tissues of the neck.

Hoarseness is often a primary symptom. It is usually associated with cough and does not require a separate analysis (Cheever). An interesting case is cited of a boy, four years of age, who swallowed a half-penny. A harsh cough remained after the subsidence of the primary symptoms. The child died in the eighth month after the accident. The penny was found in the œsophagus just above the bifurcation of the trachea. Changes in the character of voice other than hoarseness and the weakness of voice from debility are noteworthy. The voice is distinctive, being described as harsh, metallic, or chirping, but unlike that of the individual in health. Stridor is less frequent than one would be led to expect. It occurred to Van der Warker in a man, aged thirty-six years, who swallowed a piece of cartilage. Laryngeal spasm is noted by Torrance in a man who swallowed a bone of a rabbit. Kurz reports a case of a girl, aged twenty years, who swallowed a needle; paresis of the vocal cords ensued, which persisted for some time after the needle had been removed; an abscess formed in the neck.

4. *Excessive Mucous Secretion.*—Occasionally a person who has a foreign body lodged in the œsophagus will exhibit excessive quantities of mucus or saliva in the mouth and in the lower part of the pharynx. This important symptom is not even mentioned by general writers. It invariably signifies that in the neighborhood of the glands of the pharynx and mouth a foreign substance is exciting the mucous and salivary glands. It can not be distinguished from the presence of mucus in a case of post-œsophageal abscess, or indeed from the mucous excess of carcinoma of the œsophagus. If the pus be a little farther down—namely, back of the larynx—we are apt to have the same symptom present. A piece of bone lodged just below the pharynx is known to excite post-œsophageal abscess, the patient dying on the ninth day; throughout the history of the case an excessive amount of mucus was constantly brought out of the pharynx (Ribes). In persons of imperfect intelligence the presence of excessive mucus is of special value in determining the location of the body. In an idiot, aged twenty-five years, who swallowed a triangular piece of bone, lodging in the right side of the pharynx just as it joins the œsophagus, enormous amounts of mucus poured out of the mouth during the entire period, from the date of the accident to that of the death on the fifth day (Brown). A man, aged twenty-eight years, swallowed an artificial plate with four teeth. The primary symptoms were dyspnœa, dysphagia, frequent retching, and blood-stained saliva. The secondary symptoms were cough and the formation of copious masses of pharyngeal mucus which were occasionally slightly tinged with blood. These symptoms persisted for fifteen months, when they disappeared and the patient recovered by the removal of the foreign body with his fingers. This case is of importance since it locates the body high up in the œsophagus or in the pharynx. It excludes post-pharyngeal abscess as a cause of excessive formations (Bridgman, H. G.). A soldier swallowed a fragment of bone, and the primary symptom was pain on the level of the top of the sternum. As a secondary symptom, abundant salivation occurred. The body was pushed down into the stomach and the symptom disappeared (Bourgeois, A.).

In a boy, aged twelve years, a penny was lodged in the upper part of the œsophagus, whence it was extracted on the sixth day. In addition to the hoarseness in this case, salivation was a prominent symptom. Excessive formation of mucus appears to be as valuable a sign in old age as at any other time of life. A woman, aged sixty years, swallowing a set of artificial teeth, had as a principal symptom the excess of secretion, which symptom disappeared after the extraction of the teeth from the upper part of the œsophagus on the second day (Savory, Swinburne).

French writers draw no distinction between this excessive secretion from the throat and expectorated matter. Owing to this circumstance it is not possible always to distinguish in their reports between the sign alluded to and the results of tracheitis or pneumonia. In one case the mucus was undoubtedly of pharyngeal origin, since it disappeared after the removal of the foreign body (a shawl pin) by the finger from the beginning of the œsophagus. The subject was a child six months old (Paulin). That the symptom is due to excitement is proved by the case of a man who, after swallowing a piece of bone, suffered from œsophageal obstruction; the amount of mucus was excessive. The patient recovered after the downward passage of the bone, the excess of mucus having lasted five weeks.

An interesting instance of the importance of recognizing the secretion is seen in the case of an old woman, aged seventy years, who swallowed a set of false teeth. It was lodged in the laryngopharynx and was removed, but the excitement of the glands continued, and in the judgment of the reporter the patient would have perished had not great care been taken to remove for some time after ward the mucus as often as it formed. The secretion in this instance appears to have been exceptionally tenacious, and its retention after the extraction of the foreign body was probably due to the lack of normal tonicity in the muscles of the pharynx (Dawson).

I have met with no cases in which excessive mucus formation is reported in young children. While recognizing that negations are not of much value, this fact is worthy of mention, since in post-pharyngeal abscess of children copious mucoid expectoration is naturally present. It is probable that a diagnosis between a foreign body in the œsophagus and the presence of pus back of the pharynx in childhood may be made by the fact that in the former we have mucus excessive and in the latter not.

On the whole, it may be stated that the expectoration of large quantities of mucus in the adult, associated with the history of swallowing a foreign body, invites careful search for this body either in the pharynx, larynx, or the œsophagus behind the larynx.

If salivation can be excluded, the presence of ropy mucus in large quantities in the pharynx and its being rejected by the patient with some difficulty is, in my judgment, pathognomonic of disease in the pharyngo-larynx, or in the œsophagus, at or above the level of the left bronchus. The mucus may arise from the presence of a foreign body in either of these regions; it may be excited by pus in the retro-pharyngeal and the retro-œsophageal spaces; it may be due to carcinoma (first stage) involving the pharyngo-larynx and the upper part of the œsophagus. Diagnosis of malignant disease of the œsophagus (early stage) can be made at a time coincident with the beginning of dysphagia and long before emaciation or dyscrasia is announced.

Care must be taken to distinguish œsophageal disease from aneurysm of the aortic arch, the backward pressure from which may excite dysphagia and by the pressure on the left bronchus induce bronchorrhœa. I am desirous of making this comment since, in a case which I saw lately in consultation with Dr. J. M. Anders, a diagnosis was to be made between carcinoma of the œsophagus and bronchorrhœa of the type just named. Dr. John H. Musser, in his *Medical Diagnosis* (page 423), states that an aneurysm of the aortic arch may excite dysphagia and by pressure on the bronchial tubes may induce bronchorrhœa from dilatation. Was the cough and mucous outpour due to an aneurysm causing bronchorrhœa by pressure, or was it due to direct excitation of the œsophageal glands by disease in the walls of the œsophagus? The case proved to be one of carcinoma of the œsophagus; but the point of differentiation in the condition just named must always be made with great care.

5. *Nausea and Vomiting.*—Nausea and vomiting are among the most common symptoms of foreign body in the œsophagus (Blondeau, *Thèses de l'École de méd.*, 1830, 2). This is not surprising when one reflects with what ease vomiting is excited by the use of an instrument in the lower part of the pharynx or upper part of the œsophagus. Yet vomiting may be a symptom when the body is lodged near the cardiac end. Dudley, Denton, and Morgan report cases of this character. It is reasonable to suppose that the upper and lower parts of the œsophagus may be, when irritated, more likely to excite vomiting than the intermediate portion of the œsophagus. Vomiting is not always a primary symptom. In the cases just cited it occurred from the third to the ninth days. It would appear that vomiting as a secondary symptom is of more serious import than when it is primary, if we can conclude anything of value from so small a number of cases. In Dudley's case vomiting occurred on the second day and death on the third from hæmorrhage; in Morgan's case vomiting occurred shortly before hæmorrhage due to ulceration into the aorta; in like manner, in Duncan's case vomiting occurred on the ninth day, immediately preceding a fatal hæmorrhage.

6. *Hæmorrhage.*—The occurrence of hæmorrhage in a case of foreign body in the œsophagus is of importance, and, as a rule, it signifies that the body has caused ulceration of the wall of an important vessel, or has directly wounded it. Usually it may be said that a primary hæmorrhage is of little significance, while a secondary hæmorrhage is always of grave import, and a fatal termination of the case can be foreseen as a rule. Hæmorrhage by ulceration is, of course, a secondary symptom, but the rate at which it appears is exceedingly variable, and is determined by the resistance of the tissues as well as by the nature of the body. Fragments of bone are more apt to excite the complication than any other substance (*vide supra*, Fabrice). In four weeks after the swallowing of a

piece of bone a hæmorrhage has occurred from the descending aorta (Busk). A similar instance occurred thirteen years after a coin had been swallowed. During all this time it had been lodged at the level of the bifurcation of the trachea; the patient died of hæmorrhage into the stomach (Dorsey).

Contrasted with this case in a striking manner is that of a young woman, aged twenty-two years, who swallowed a set of artificial teeth and died on the ninth day as a result of ulceration of the aorta (Duncan). Huhues reports a similar case, that of a young woman who swallowed a bone; hæmorrhage occurred on the ninth day and the patient died on the tenth.

A fourth case is that of a man, aged twenty-five years, who, after swallowing a piece of bone, died on the eighth day of hæmorrhage; in this instance the left carotid artery was penetrated. The fifth example is that of an old woman who died on the tenth day; the blood in this case passed into the stomach. Another case was that of a man who died on the fourteenth day from hæmorrhage consequent upon ulceration into the aorta. A remarkable instance is reported of an aged woman who died from the effects of ulceration in the right subclavian artery, which passed in front of the œsophagus (Kirby). A woman, aged sixty-five years, died from hæmorrhage on the tenth day; blood had passed downward. The bleeding in this case was from the right thyreoid artery (Pilati). In a girl, aged eighteen years, who swallowed a piece of bone, fatal hæmorrhage ensued at the eighteenth month. The blood passed downward. The aorta was perforated. In a man, aged twenty-nine years, who swallowed a spiculated piece of bone, death ensued from hæmorrhage on the ninth day. The aorta had been directly wounded.

The entire percentage in which hæmorrhage occurs is very large—namely, twenty per cent. Of the entire number, in fifteen per cent. one of the great vessels was opened; in all of these instances excepting two (the carotid and right subclavian) the aorta was the vessel which suffered. Among the smaller vessels, the inferior thyreoid artery and the œsophageal arteries are mentioned. Those in which the source of hæmorrhage is not named are presumably capillaries in the walls of the œsophagus.

As already noted, as the blood escapes in the œsophagus at a point low down, it often trickles into the stomach, where it is found by examination in cases of sudden death; or it may pass by the rectum in more lingering forms. Thus bloody stools may exist with or without hæmatemesis. The direction of the flow of blood being upward if the vessels of the neck are involved, it naturally escapes by the mouth. It is scarcely necessary to add that the hæmorrhage from the mouth is not inconsistent with the occurrence of bloody stools in the same individual (Morgan). In the case of a man dying on the eighth day, it was found that the œsophageal arteries near the cardiac end had been lacerated (Labat). In a middle-aged man blood escaped only into the stomach, and no location of the source of the bleeding could be detected after careful dissection of the œsophagus (Dudley). When a patient reports with hæmorrhage from the rectum and no history of a foreign body of the œsophagus is elicited, it becomes a matter of moment to locate the source of the bleeding. The case of Labat may be so cited, as well as a second—namely, that of a girl of sixteen years who swallowed a needle. Bloody stools ensued, the patient dying on the eleventh day.

The immediate wounding of an important vessel is, of course, possible. A needle may penetrate the aorta at once with a fatal result (Mackenzie). A young man swallowed a shell-like fragment of bone, which divided the common carotid artery as though it had been cut by a knife (Richet).

Hæmoptysis is rare in the history of an œsophageal foreign body. A case is cited, however, of a woman, aged sixty-nine years, who swallowed a piece of bone and who raised blood in the act of coughing for eight months after the accident. The patient recovered after spontaneous ejection of the offending body (Brown).

Hæmorrhage from direct laceration of the œsophagus is less commonly seen than would at first sight be supposed. The following statement illustrates the possibility of such a lesion: A woman, aged thirty-four years, swallowed a pocket knife. Hæmorrhage ensued from the wound made by the knife (Gussenbauer). A fish bone lodged in the œsophagus behind the cricoid cartilage has been known to be followed by bleeding (Mixer). Capillary hæmorrhage can be excited by the surgeon in his efforts to remove the foreign body (Torrance).

7. *Anxiety.*—Anxiety is prominent among the symptoms, and apparently is in no way associated with the character of the substance which has been swallowed. The patient who knows that a foreign body is lodged in the œsophagus has, according to the reports of acute observers, an anxious expression, which is not seen in those who imagine that they have swallowed an obstructing mass of some sort. Aschenborn reports anxiety being present on the second day in a girl of sixteen who had swallowed a needle, the patient dying on the eleventh day from hæmorrhage; Paulin reports the symptom in a woman who had swallowed a shawl pin; Torrance detected it in a man who had swallowed a bone of a rabbit; and McLean also remarked the symptom in a woman who had swallowed a set of artificial teeth. Verneuil places importance upon anxiety. It is probably much more frequently present than is reported. Doubtless other phenomena occasionally observed, such as insomnia (Buist), belong to this category.

8. *Abscess.*—A foreign body in the cervical portion of the œsophagus rarely involves the peri-œsophageal structures. The sheath of the great vessels is recorded as involved in two instances only (Crequi, Richet). In the chest the offending body can make pressure forward, but the conditions are such as to greatly diminish the risks of side pressure.

The descending aorta, the left carotid, and the left subclavian arteries cause the descending body to be deflected to the right. Hence involvement of the left pleural sac is among the rarest of lesions, while four examples (Busch, Demarquay, Ribes, Shann) are recorded in which air and pus were found in the right pleural sac from rupture of the œsophagus.

In an article in the *Edinburgh Medical and Surgical Journal*, vol. lxxi, 1849, p. 130, twenty cases of diseases of the œsophagus are mentioned in which post-mortem results are described. Of this number, eleven exhibited perforating ulcers of the œsophagus involving the right pleural sac or the right lung; two exhibited perforating ulcers involving the right bronchus, while in two only was there any involvement of the left pleura or left lung. The material for the most part is from the analyses of Vigla (Recherches sur les communications accidentelles de l'œsophage avec les poumons et les bronches. Par le Dr. Vigla, médecin du bureau central des hôpitaux. *Archives générales*, 4me série, i, 12, octobre, 1846).

Pus often forms quickly in the posterior mediastinum when a foreign body is lodged in the œsophagus. Five cases are noted in which pus was found at some point about the œsophagus. The import of the presence of pus is very slight: one of the cases proved fatal on the fifth day (Demarquay), one on the eleventh (Aschenborn), and one not until nearly two years had elapsed. But it is, of course, open to surmise in the instance last given as to the length of time pus had been present. Abscess and emphysema were present together in one case (Crequi). Inflammatory swelling, which did not go on to suppuration, occurred in one case (Kurz). The foreign body was a needle. The patient recovered. The pus in a few minutes has been known to enter the sheath of the great vessels of the neck (Crequi, Ribes, Richet).

A nice point of diagnosis arises when a cervical swelling occurs and the presence of a foreign body is suspected. The body may pass into the stomach, yet its retention in the œsophagus may have been of a kind sufficient to excite a peri-œsophageal inflammation and abscess. A case of this kind in a woman, aged sixty, led to an incision being made to empty the collection. But no opening existed in the œsophagus, nor was a foreign body found. The case may have been idiopathic (Thomas).

9. *Emission of Air from the Œsophagus.*—Belching is a symptom which is very rarely present, and, indeed, is not mentioned by general writers. Its significance is grave, as can be seen in the following case: A young man swallowed a set of artificial teeth. The body was apparently lodged at first in the neck, since dyspnœa, stridor, and an attack of syncope are mentioned among the primary symptoms. On the tenth day the patient was seized with cough, dorsal pains, and attacks of choking. Incident to one of the attacks last named, he belched large quantities of air. The features last named persisted, the patient dying of phthisis * fifteen years after the original accident. At the autopsy an opening was found in the œsophagus two inches below the larynx, which communicated with the trachea. No foreign body was found. The observer (Castle) believed that during deglutition air passed from the trachea into the œsophagus and was forced into the stomach. After a while belching relieved the stomach of the distention caused by the presence of air.

An equally remarkable case with the foregoing is that of a girl, aged five years, who swallowed a small tin saucer belonging to a toy set of dishes. The child was but little distressed for four months, when, in the second day of an attack of croup, regurgitation of food occurred and (following the introduction of an instrument) emission of air. Diagnosis was made of an obstructing œsophageal foreign body and œsophageal-tracheal fistula. The patient died of exhaustion in one month after the attack just described. At the autopsy the toy was found lying across the œsophagus, five inches from the upper end. A large fistula between the œsophagus and trachea was demonstrated. It is fair to assume here that the saucer had lain for four months on the anterior side of the œsophagus, and had made sufficient pressure on the trachea to form a fistula, which the plate itself occupied. During the attack of croup the plate shifted its position, fell farther down and turned over so as to obstruct in great part the œsophagus; the fistula was now unguarded, so that air escaped into the gullet (Pattison).

Care should be taken to distinguish belching from retching. Retching is a part of the act of vomiting.

10. *Pain.*—The value of pain is not as great as at first sight would be supposed. Yet Poulet asserts that in diagnosis "pain in one spot" is one of the most reliable aids. If the foreign body impinge violently against the walls of the œsophagus, as occurred in a case of Roze, in a man who swallowed a five-franc piece, the pain at the point of impact may be severe. Great pain also ensues upon swallowing plates of artificial teeth. But most observers say little or nothing of pain. Its locality is far from constant. It was referred to the cervical and dorsal vertebræ in three cases; over the epigastrium in two; back of the sternum in three; and at the base of the neck in one. According to Blondeau (*Thèses de l'École de médecine*, 1830, ii), soft and slightly humid bodies are apt to cause more pain than those that are hard and solid. Verneuil asserts that the pain is usually referred to the upper part of the œsophagus, no matter at what point the body may be lodged.

11. *Convulsions.*—Since convulsions arise from many causes which disturb the economy, it is not surprising to learn that they are also occasionally associated with foreign bodies in the œsophagus. In adults it was observed in two females (Marston, Meyer) and one male (Castle). It is strange that Poulet states that convulsions "are encountered frequently." All the cases cited by him are from Hévin and are not modern.

12. *Syncope.*—Of the same general character with convulsions belongs the subject of syncope. Fright probably accounts for its occurrence. It is reported but once in a woman (Langenbeck).

13. *Miscellaneous.*—Every subject has its curiosities. A case of tetanus associated with œsophageal foreign body is reported by Larrey and one of enuresis by Maxwell. Nélaton is quoted in connection with a case of myelitis from a foreign body penetrating the spinal cord. Mackenzie refers to a case, not otherwise reported, of Turtle's, similar in character.

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* The occurrence of phthisis and the simulation of phthisis in patients who are known to have swallowed foreign bodies is of importance. Roe lays special stress upon this subject.

I have drawn the following conclusions from the premises stated above: Authors of monographs on foreign bodies in the œsophagus have overlooked the rapidity with which softening of the walls of the œsophagus occurs, the significance and value of emphysema, the occurrence of excessive mucous secretion, and the possibility of emission of air; and, in the second place, they have laid too much stress upon pain and convulsion, but not enough, at least in the adult, upon the presence of an anxious expression of countenance.

IS ACUTE AMYGDALITIS IN ANY WAY DEPENDENT ON THE RHEUMATIC DIATHESIS?*

By G. B. HOPE, M. D.

For some time past I have been disposed to question the theory of very universal consent that amygdalitis has for its leading predisposition the exhibition of a rheumatic or gouty diathesis. This element of causation is entertained not alone among the so-called old school of practitioners, but is equally emphasized in the majority of recent text-books of our own and foreign authors.

The question involves more than the simple argument of individual belief, since it carries with it a direction of treatment and the employment of remedies that, if not decidedly useful in meeting the real indications, should be held in some reserve until by a comparison of results their intrinsic efficacy is positively demonstrated.

It is a subject of frequent comment among those brought in contact with graduate students that there exists a prevailing disposition to fall into beaten lines of practice, and to accept general statements without stopping to inquire into principles the truths of which may be demonstrated by every-day experiences. To what extent this particular theory of a rheumatic diathesis is based upon sentiment can not, of course, be settled in positive terms by the observations of a few, but, so far as they go, they may contribute in unfixing the prevailing hard-and-fast rule and invoke a discrimination in favor of a properly selected class of cases.

While a definition of rheumatism must be somewhat vague, its subjective symptoms are generally sufficiently clear to be recognized in a majority of instances when associated with an acute disorder like that of amygdalitis. Although there appear during the year, scattered through a special throat clinic neighboring upon two thousand cases, a sufficient number of typical anginas, it may be said in the writer's individual experience that it is regarded as exceptional to find an instance answering to the rheumatic history. So fixed is this opinion that, as a test to a disinterested standpoint, successive cases have been turned over for the most searching examination to the advocates of the rheumatic theory with altogether a negative result. If a local acute manifestation of this rheumatic state occurs, it might, under ordinary circumstances, be looked for preferably in a sero-fibrous, not a muco-fibrous, tissue, such as constitutes the major part of the tonsil, unless it is conceded that the tonsil assumes a selective area. One hears comparatively little of acute rhinitis or nasopharyngitis as offering either pathologically or therapeutically the same aspect that surrounds the accepted views regarding the inflamed tonsil. On the other hand, it is equally rare to meet with examples of recurring angina in those who carry recent or present unmistakable evidence of a rheumatic attack. In other words, the predisposition bears, if anything, a diminished ratio to the average individual, owing, no doubt, in part to the more than usual care exercised to guard against exposures and excesses. In addition, also, it is noteworthy that intrinsically the tonsil in later life becomes less and less subject to inflammation, notwithstanding the fact that the gouty and rheumatic age is more confirmed. Of suppurative periamygdalitis the course and culmination point so clearly to an infectious origin as to emphasize with every distinctness a condition only accidental if associated with a rheumatic manifestation. The fact is well established that intranasal operations, as refracture of the sæptum, are extremely likely to be followed by an abscess in this location. Consequently, if the proposition as given is correct, the utility of the usual class of remedies addressed to a rheumatic diathesis in the hope of arresting or controlling an acute amygdalitis is either erroneous in its practice or must be understood to act independently and by methods not distinctly stated. It is possible the latter is the case, inasmuch as it is scarcely reasonable to attribute a happy result to a mistaken appreciation and the natural disposition to progressive resolution. However this may be, it is a sufficiently frequent occurrence that the administration of guaiac and the salicylates is apt to nauseate and interfere to a greater extent with the general well-being of the patient than is desirable, unless, indeed, such remedies are deemed imperative.

So far as it is possible to judge, the average duration of an amygdalitis of ordinary severity ranges between five to seven days, during which a certain fever and malaise persist. On consulting the experiences of those favoring the antirrheumatic treatment but little abbreviation of the time limit is perceived, notwithstanding the earliest advantage of such remedies. The query is consequently a natural one, how far the remedy or how far the subject is to be valued in the instance where an attack apparently acute has aborted in intensity or duration. With especial reference to guaiac, it is difficult to understand by what sophistry a patient can be brought to acquiesce in the selection of the officinal current paste lozenge, crowding the mouth with a tenacious and offensive secretion that can neither be readily swallowed nor expelled. Surely some consideration is due the sufferer, while satisfying by methods less vigorous the uncompromising theory of which the following words of Lennox Browne afford the clearest and most concise evidence: "From the most careful examination, extending over a number of years, the author has come to the conclusion that the dartrous or arthritic diathesis invariably exists in those patients subject to acute tonsillitis."

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* Read before the American Laryngological Association at its seventeenth annual congress.

AMERICAN STERILITY.*

By WALTER LINDLEY, M. D.,
PROFESSOR OF GYNÆCOLOGY IN
THE MEDICAL COLLEGE OF THE UNIVERSITY OF SOUTHERN CALIFORNIA;
FORMERLY PRESIDENT OF THE CALIFORNIA STATE MEDICAL SOCIETY, ETC.

THE obstetrician finds his vocation among American women disappearing from the face of the earth.

It is a fact that the American family with more than one or two children is the exception. From the records of six generations of families in some New England towns it was found that the families composing the first generation had on an average between eight and ten children; the next three generations averaged about seven to each family; the fifth generation less than three for each family. The generation now on the stage is not doing so well as that. In Massachusetts the average family numbers less than three persons. In 1885 the census of Massachusetts disclosed that 71·28 per cent. of the native women in that State were childless. The census of 1885 in the State of New York shows that twenty-five per cent. of the married women of that State are childless, fifty per cent. average less than one child, and seventy-five per cent. average only a trifle over one child.

Southern California has fully as dark a record as New England—that is, in the family where the man and wife are both American born. It goes without saying that the medical profession in this country is composed to a great extent of typical progressive Americans, and I ask you to make mental statistics of the children in the families of the physicians in southern California and you will find very few of them containing more than two.

Had the Rev. T. R. Malthus lived in the United States to-day he would never have argued about the danger of overpopulation as he did in his interesting volume on *The Principles of Population.*

Plato, in order to control the population, would allow no man to marry younger than thirty and no woman to marry younger than twenty. He then proposed that after they had reached forty and fifty respectively they must cease multiplying and replenishing the earth.

Aristotle's law on the subject was that the man must have reached thirty-seven and the woman eighteen. As Malthus points out, there must always be many more girls of eighteen than men of thirty-seven, and consequently many women would remain unmarried. Plato went further, and would have all children of inferior citizens and any from others which are imperfect in their limbs buried in some obscure and unknown place. Aristotle claimed that if every person be left free to have as many children as he pleased, the necessary consequence will be poverty, and poverty, he said, is the mother of villainy and sedition.

While the Greeks were thus aiming to check the increase of population, Lycurgus proclaimed laws to favor an increase in Sparta. In that country a man who had three sons was exempt from the night watch, and he who had four was freed from taxation and all public duties. Louis XIV gave pensions to those who had ten and twelve children.

In southern California there are, it is true, many children, but the average American family is very small.

As I sat writing this an evening or two ago, I jotted down the names of twenty-five families of my acquaintance in Los Angeles, taking them as fast as I thought of them. The list was composed entirely of families of professional and business men ranging in age from thirty-five to fifty. All had been married quite a number of years. The result of my memorandum was that in these twenty-five families there were but eighteen children. These families were wholly unselected, and are about the average Protestant American families outside the ranks of laborers.

What are the causes of this small proportion of children? Disease, preventives of conception, and abortion form the trinity of responsibility in this grave condition. It is true that the first cause (disease) results in many women being barren, but I believe you will agree with me that the last two causes, preventives of conception and abortion, are the two chief causes.

The "A. P. A." might find food for thought by investigating the infrequency of criminal abortion in Catholic families in the United States. It is the Protestant or agnostic American who too often uses one of the various means of preventing conception.* If, through inadvertence, pregnancy should occur, then an abortion is in order. Disease and poverty and war and accident all work together to keep down the population, but we are overcoming these. Plagues and pestilences are rare. The number who die in California from starvation are very small, while war has played but a small part. Through the diffusion of the laws of sanitation, improved dietary, and advanced therapeutics, the longevity of man is increasing, but the American woman's aversion to childbearing is blighting our civilization, and can well be named the twentieth-century curse. In this aversion the woman frequently echoes the wish of the husband.

A large proportion of the American young women who marry do so with the determination that they will have no children. They are abetted in this notion by many elderly women. The cure for this terrible sentiment is education. The home, the press, the schoolroom, and the pulpit should be centres for reviving the ancient idea of the nobility of motherhood. The physician should not underestimate his influence. By constantly bearing in mind the danger of the present tendencies, he can do much to change the current. Let us hope that we shall again see the day when thoughtful motherhood shall be considered the highest function of womanhood, and to shirk this natural duty will be deemed a disgrace.

The Tri-State Medical Society of Alabama, Georgia, and Tennessee will hold its seventh annual meeting in Chattanooga, on Tuesday, Wednesday, and Thursday, October 8th, 9th, and 10th.

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* Read before the Southern California Medical Society at the semi-annual meeting in Los Angeles, June, 1895.

* I write this opinion as a Protestant, and should be glad to learn that it was not well founded.

COMPENSATORY ARYTÆNOID MOVEMENT.*

By WILLIAM PORTER, M. D.,
ST. LOUIS.

The tendency in our physical organization to atone for a local or even general deficiency is an interesting study. Where one sense is lacking, other senses are often more acute. The blind man hears better than the average man, and the deaf see more exactly. Especially marked is the attempt at compensation where there is a fault in one of two similar organs. Cases in point will be recalled by every one. A young man who had always laid claim to more than an ordinary range of vision was recently told by an oculist that the vision of one eye had never been of any value. A patient from New Mexico was found to have almost entirely lost not only the use but the substance of one lung, owing to large abscesses, yet the other lung had so developed as to do the work of two, and the man is well and strong, with no trace of disease except the local deformity. An author tells us of a frontier camp where a one-eyed man was the best marksman and a one-armed man had the strongest grasp.

Two cases of imperfect movement of the laryngeal muscles have interested me in the study of compensation in voice production. In each case the fault seemed to have been of long duration and, so far as could be determined after a lengthened period of observation, was entirely local. Instances of unilateral paralysis of an adductor from pressure upon the recurrent nerve, or from temporary one-sided inflammation, or where there is a mechanical obstruction, are known to us all. I believe the cases here presented, though possibly not unique, are comparatively rare, and are illustrations of partial one sided ankylosis, with increased compensatory action of the opposite side.

The first case is that of a singer, a tenor of national reputation, well known for the accuracy and flexibility of his voice. I first saw him on account of a slight acute pharyngitis and noticed a marked abnormity of the laryngeal movement. The left arytænoid advanced, on phonation, a little more than one half the usual distance. There was both adductor and abductor action, but limited. The cords were normal in appearance and the whole larynx in rest was not suggestive of any impairment. When phonation was made, the right arytænoid advanced well beyond the median line, meeting the left and making the line of approximation of the cords incline very much to the left. I have examined him at intervals of a year and have noticed no change at any time in the movement, and I have never been able to discover that his voice was in any way affected by the condition. There was no history. He never had had laryngeal trouble to his knowledge, and said that his throat "was always ready for hard work." Physical examination of the chest and along the recurrent nerve gave no evidence of pressure from any source.

The second case is that of a young business man of this city who came to me almost aphonic. He had some slight laryngitis and almost the same phenomena in movement as described in the other case. The inflammation was surely not sufficient of itself to produce the aphonia. He had consulted several excellent laryngologists who, he said, were unwilling to encourage him as to the prognosis, and, I am afraid, he did not get much comfort from me. I believed, as I do now, that there was a permanent though not complete ankylosis of the left arytænoid, for there was no remote or peripheral paralysis of neurotic origin discernible. As soon as the local inflammation, which was not great, subsided, strychnine was given and the laryngeal electrode used daily. It is possible that a little movement was regained on the left side, but certainly there was increased movement of the corresponding side. Soon his voice was entirely restored and has continued strong for two years. There is still the impaired movement on the left side and the compensatory action on the right.

In the absence of any history, rheumatic or specific, it is possible that in each of these cases the fault may have been congenital, and in the last instance the aphonia may have resulted from the slight laryngitis, which of itself might be unimportant but sufficient to hinder approximation in a larynx incapable of free normal movement.

Several authors speak of the difficulty of distinguishing between paralysis and ankylosis where there is diminished arytænoid movement. It is possible that paralysis exists in each of these cases, but we should expect that increased effort of phonation would result in some movement beyond a certain point always reached when phonation is attempted. In these cases no effort will bring the left arytænoid beyond a certain point. There is, as before stated, a little movement, but it will be remembered that the cricoid surface of the crico-arytænoid articulation is merely a facet. It is a reasonable explanation that there is an adhesion between the inner margin of the facet and the arytænoid, and that this adhesion permits of some adductor response, with slight rotation of the arytænoid inward. It is perhaps unimportant whether the limitation of movement is due to a partial paralysis of the adductor or such an adhesion between the cartilages as suggested. We may conclude, however, that permanent restriction of movement on one side of the larynx does not always prevent perfect phonation.

May 20, 1895.

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* Read before the American Laryngological Association at its seventeenth annual congress.

CYSTIC OVARIES: LAPAROTOMY.

By V. BERRY, M. D.,
WAGONER, INDIAN TERRITORY.

It is not often we consent to expose our mistakes, though such, of course, might sometimes teach us a lesson of greater benefit than the recording of those cases in which none are made. The following case, while illustrating a false diagnosis, terminated in a happy recovery, which is often a soothing balm to the conscientious surgeon:

Mrs. C., aged thirty-one years, of white and Indian blood, mother of one child ten years old, called at my office on the 29th day of March, 1894, complaining of the following symptoms: Menorrhagia, profuse leucorrhœa, frequent and burning micturition, great pain in right side during menstrual flow, which came on sometimes every two weeks and sometimes every four weeks, headache, backache, "an enlargement the size of a small apple in the right side, which disappeared with cessation of the menstrual flow," general pelvic tenderness at all times, slight hacking cough, considerable emaciation (naturally a spare-built woman), and great pain on coitus. Had never miscarried that she knew of, though at one time (seven or eight years previous) had suspected a miscarriage, but, as a physician was not called, was doubtful. Could get no specific gonorrhœal history admitted, though am almost positive of her infection at a remote period. This opinion is based on subsequent examination and a knowledge of her social surroundings. Made a very superficial examination, and put her on rest, douches, hygiene, and reconstructive agents generally. Made a thorough examination one month later and found a mass of about the size of a small orange in the right pelvic cavity, firmly adherent and pushing the fundus uteri somewhat to the left. Could distinguish nothing unusual in the left cavity, except extensive adhesions, which I attributed to repeated attacks of gonorrhœal peritonitis, as she gave a history of pain paroxysms extending over a period of two or three years past, with a purulent discharge at a date she could not give. Adhesions on the right side about the same as on the left. Leucorrhœal discharge moderate in quantity but foul in quality—scantier since using douches.

The posterior fornix vaginæ was found to be tense, but not "board-like"; anterior not so resisting. Uterus was found to be firm in position, but at about the normal angle, except a slight tilting to the left, as before mentioned. It was of about normal consistence and size, showed a slight laceration and consequent granular erosion which I attributed to the acrid discharges and the laceration itself. Diagnosticated hæmatosalpinx, chronic peritonitic adhesions, with possibly a pus tube instead of the blood tumor. Could not get sufficient temperature history to justify a positive pus diagnosis. Advised laparotomy for removal of one or both tubes and *probably* of both ovaries. Patient consented to operation in May, but on the day set found her suffering from a severe bronchitis, and necessarily had to postpone the work to a future date. The bronchial affection was slow in resolving, and at her solicitation we tried the usual routine treatment of her pelvic troubles, including faradization, but all to no purpose, except as to slight palliation.

On the 28th day of July, 1894, with the assistance of Dr. Isabelle Cobb and my wife, I opened the abdomen and removed both ovaries and the outer half of both tubes. The organs were firmly bound down by adhesive bands and very difficult of removal—in fact, so much so that we almost abandoned one of the ovaries, so firmly was it imbedded in a mass of cicatricial tissue. No pus was found. The right ovary was twice the size of normal, and was studded with a great many small papillomatous cysts, the largest being of about the size of a hickory nut. The left ovary was simply a mass of papilloma, although the ovary itself was about normal in size. The tubes were somewhat larger than normal, both infundibula occluded, and good specimens of the old, chronically inflamed tube, in which the inflammation has reached a very low ebb, but stands ready to kindle into active life at the slightest provocation. Ligated with silk, sutured with catgut, flushed the abdomen with sterilized water, and dressed with iodoform gauze. Inserted a Thomas's drain-tube, which I afterward found to be unnecessary and removed in seven hours.

Patient rallied well, but suffered great nausea from the anæsthetic, chloroform, for forty-eight hours.

At 5 P. M., five hours after operation, temperature was 100° F.

On the 29th it was 99° at 5 A. M., 100° at 1.25 P. M., and 101·2° at 7.30 P. M.

Suspecting, but somewhat doubtful, that sepsis had occurred, began the administration of quinine, in three-grain doses every two hours, 30th of July.

On the 1st day of August, finding the temperature did not abate, but steadily increased to 103° at 5 P. M., I removed the dressings, and found a stitch-hole abscess at the entrance of every suture, except at the wound angles. Also found the drain-tube site ununited and suppurating, although at other points the lips were uniting nicely. Douched the wound with full-strength hydrogen peroxide; removed all sutures; douched again with fifty-per-cent. peroxide solution; dusted with boric acid; put on aseptic (?) adhesive strips, iodoform gauze, and bandage. At 8 P. M. patient took a violent coughing fit, and opened nearly the entire wound except the peritonæum, which seemed to be well united. Reapplied all the dressings.

At 10 P. M., five hours after douching and removal of sutures, the temperature dropped to 99·4°, a fall of three degrees and six tenths. Did not again reach a hundred till the 4th of August.

Dressed on the 2d of August and found considerable pus. Douched with fifty-per-cent. peroxide solution and dressed as before.

On the 4th, at 6.30 P. M., temperature reached 101°; and on the 5th, at 8.30 A. M., removed adhesive strips, cleaned out thoroughly with peroxide, and put in four fine silk sutures without an anæsthetic.

Temperature varied from 99° to 101·2° during the 5th, 6th, and 7th of August.

At 9 P. M. on the 7th it reached 99·6°, and in a few hours went to normal, and recovery was rapid and satisfactory from that period till her discharge. The wound healed with a deep, firm cicatrix, and the patient left my care during the last week in August, with instructions to wear a snug-fitting abdominal supporter for six months, and take no violent exercise for a year or more.

This patient is now able to attend to the ordinary duties that fall to the lot of a housewife, and is living in comfort in a physical sense.

It is perhaps well to say that this patient was fed on iced buttermilk the first forty-eight hours succeeding operation; also, that my reason for giving quinine was that in this climate latent malarial toxæmia often exists, and is excited into activity by severe surgical procedures.

The erratic temperature can only be accounted for by infection, which was, no doubt, due to faulty technique. In conclusion, allow me to say that I do not wish to be understood as holding a knife ready to castrate every human female that might fall a victim to the surgeon's knife, but I *do* believe in removing diseased organs that are beyond redemption wherever found, if a gain in comfort and usefulness is to be had thereby. Is such a thing as an aseptic adhesive strip possible? Will some one please answer that question *practically?*

The William F. Jenks Memorial Prize of five hundred dollars, under the deed of trust of Mrs. Jenks, has been awarded to Dr. A. Brothers, of New York, for the best essay on Infant Mortality during Labor, and its Prevention. The prize committee also reports as highly meritorious the essay on the same subject bearing the motto Vade mecum. The writers of the unsuccessful essays can have them returned to any address they may name by sending it and the motto which distinguished the essay to the chairman of the prize committee, Dr. Horace Y. Evans, College of Physicians, Philadelphia.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, AUGUST 17, 1895.

THE *INDEX MEDICUS.*

We are glad to see that the movement to revive the *Index Medicus* is being aided in various quarters. For example, Dr. George Thomas Jackson, of New York, informs us that he has sent in his subscription of twenty-five dollars and has secured other subscriptions. He asks us to announce that he is prepared to receive subscriptions, and that the receipts which he will give are sent to him by Dr. Billings. He adds that as soon as the summer is over he expects to make a personal canvass for the *Index Medicus* among his friends. Dr. Jackson offers to send us the names of any subscribers that he may get. This, we think, it would be very well for him to do. Nobody ought to shrink from having his name published as that of a participant in the good work of reviving this unrivaled index of contemporary medical literature, an index that, we think, might well serve as a model for undertakings of the sort in other branches of literature; and every well-known name that is published is likely to stimulate individual members of the profession to join in the enterprise.

As we said last week, the *Index Medicus* must be re-established. It is a great pity that there has had to be any break in the continuity of its issue, but the break is not yet irremediable. It should be borne in mind, however, that every month's delay in resuming its publication adds to the difficulty that its editors will find in rendering their work continuous in the future with what they have done before. The brunt of the undertaking, as regards the subscription of a fund, will necessarily fall on individuals, and we are glad that Dr. Sajous's plan is being supplemented by Dr. Jackson's work, done and to be done. It will be creditable if other individuals, not content with subscribing themselves, constitute themselves canvassers among their friends. In that case it will of course be in the highest degree desirable for them to arrange with the editors of the *Index* as to the details of the course they are to pursue in such matters as giving receipts, forwarding subscriptions, etc. These details are apt to be overlooked under the influence of enthusiasm, especially among members of a profession not noted for the strictness of its business methods, but they are highly important and should not be left for haphazard settlement in the indefinite future. We are persuaded that a hint as to this point will be all that is needed, and that the work of re-establishing the *Index Medicus* will soon be in a fair way toward completion.

MINOR PARAGRAPHS.

A NEW YORK CAREER TOLD IN GERMAN.

The *Wiener klinische Wochenschrift* for August 1st devotes nearly four of its large pages to Dr. C. Heitzmann's story of his twenty years' career in New York as read before the Gesellschaft der Aerzte in Wien on the 29th of May. It deals largely, of course, with Dr. Heitzmann's work as a teacher of microscopical anatomy, but there are woven in with it some very pleasant allusions to his relations with his American colleagues and some touching portraiture of his personal and domestic experience in New York, where, we are glad he can say, he has passed a score of years in a state of happiness marred only by such afflictions as come to all men sooner or later.

THE TRANSMISSION OF MORPHINE FROM THE MATERNAL TO THE FŒTAL CIRCULATION.

At a recent meeting of the Paris Obstetrical and Gynæcological Society, as we learn from a report of the proceedings published in the *Mercredi médical*, Dr. Bureau mentioned the case of a woman who, having been addicted to the use of morphine for about seven years, had got to the point of taking fifteen grains a day when she was delivered of a child. When the umbilical cord was cut Dr. Bureau caught the blood that escaped from the umbilical vessels and the placenta, and on chemical analysis it was found to contain morphine. The effect of the drug on the child, if there was any, is not mentioned.

MORE NEWSPAPER MEDICINE.

A groove in a hole is indeed a curiosity. An item in one of the newspapers recounts the sad case of a Staten Island dentist who broke a tooth that he was extracting, and was struck in the eye by a fragment of it. "It was discovered," says the article, "that a groove had been made in the pupil of the eye by the flying particle of tooth." It is added that the doctor in attendance has "but few hopes" of saving the sight of the injured eye.

A NEW FORM OF CLINICAL RECORD.

We have received a specimen of a set of blanks entitled *A Complete Case Recorder in General Medicine and Gynæcology*, arranged by Dr. S. B. Lyon, of Chicago, and published by the A. L. Koursh Company, of the same city. The arrangement strikes us as very ingenious and quite as comprehensive as anybody could wish for.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 13, 1895:

DISEASES.	Week ending Aug. 6.		Week ending Aug. 13.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	35	3	11	1
Scarlet fever	25	0	24	2
Cerebro-spinal meningitis	0	0	1	0
Measles	166	12	115	5
Diphtheria	178	16	162	32
Small-pox	0	0	0	0
Tuberculosis	97	108	40	108

The Mississippi Valley Medical Association.—In addition to the programme which was published in the issue of August 3d, we have received notice that the following papers are expected to be read at the next meeting, which is to be held in Detroit on September 3d, 4th, 5th, and 6th: The Deeper Inflammations of the Skin, by Dr. A. W. Brayton, of Indianapolis; Some Considerations with Regard to the Senile Heart, by Dr. Robert H. Babcock, of Chicago; How to Correctly Diagnosticate Sexual Derangements in Man, by Dr. Eugene Fuller, of New York; The Psychology of Suggestive Therapeutics, by Dr. William A. Galloway, of Xenia, Ohio; A New Phase of Cœliotomy, by Dr. F. J. Groner; What is the Matter with the American Stomach? by Dr. J. H. Kellogg, of Battle Creek, Mich.; Retention Cystitis as a Consequence of Hypertrophied Prostate, with a Report of Two Cases, by Dr. S. C. Martin, Jr., of St. Louis; The Indications for Operation in the Early Period of Ectopic Pregnancy, by Dr. L. S. McMurtry, of Louisville; Epilepsy and some of its Allied Conditions, by Dr. Curran Pope, of Louisville; The Antitoxine Treatment of Diphtheria, by Dr. Theodore Potter, of Indianapolis; The Treatment of Pulmonary Consumption in Hospitals, by Dr. E. L. Shurly, of Detroit; Cod-liver Oil and Cod-liver Extracts—Leucomaines and Ptomaines, by Dr. F. E. Stewart, of Detroit; A Complication in Cataract arising from Diabetes, Albuminuria, etc., by Dr. J. O. Stillson, of Indianapolis; Carcinoma of the Stomach, by Dr. W. C. Weber, of Cleveland; The Therapeutics of Oleo-creosote and Creosote Carbonate, by Dr. J. A. Wessinger, of Ann Arbor, Mich.; Three Hysterectomies following Operations for Pus Tubes, by Dr. J. H. Carstens, of Detroit; The Treatment of Syphilis, by Dr. J. T. Jelks, of Hot Springs, Ark.; Bio-chemistry in its Relations to Nervous Diseases, by Dr. G. W. McCaskey, of Fort Wayne, Ind.; A New Light on the Rôle which Iron Plays in the Physiological Economy, by Dr. W. H. Porter, of New York; and Inguinal Colotomy *vs.* Total Extirpation of the Rectum, by Dr. Leon Strauss, of St. Louis.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 4 to August 10, 1895:*

Kieffer, Charles F., First Lieutenant and Assistant Surgeon, is granted leave of absence for two months.

Lippitt, William F., First Lieutenant and Assistant Surgeon, is granted leave of absence for two months.

Tesson, Louis S., Captain and Assistant Surgeon, is relieved from duty as attending surgeon at Headquarters, Department of the Missouri, and as examiner of recruits at Chicago, Ill., and ordered to Fort Ethan Allen, Vermont, for duty, relieving Appel, Aaron H., Captain and Assistant Surgeon. Captain Appel, on being thus relieved, will report for duty as attending surgeon and examiner of recruits, Chicago.

Woodruff, Ezra, Major and Surgeon, is granted leave of absence for one month.

A board of officers to consist of Harvey, Philip F., Major and Surgeon, Torney, George H., Major and Surgeon, and Mason, Charles F., Captain and Assistant Surgeon, is appointed to meet at West Point, N. Y., August 15, 1895, or as soon thereafter as practicable, for the physical examination of the cadets of the first and third classes, the cadets of the second class, on their return from furlough, and such other cadets of the United States Military Academy, and cadets for admission thereto, as may be ordered before it.

A board of officers is appointed to meet at Fort Robinson, Nebraska, on Friday, September 6, 1895, for the examination of Crampton, Louis W., Captain and Assistant Surgeon, with a view to determining his physical fitness for promotion.

Detail for the Board.

Bache, Dallas, Colonel and Assistant Surgeon General.

McElderry, Henry, Major and Surgeon.

Corson, Joseph K., Major and Surgeon.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 10, 1895:*

Brathwaite, F. C., Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to duty on the U. S. Steamer Lancaster.

Herndon, C. G., Surgeon. Detached from the Bureau of Medicine and Surgery and ordered to duty on the U. S. Steamer Lancaster.

Kite, I. W., Passed Assistant Surgeon. Detached from the Monitors and ordered to duty in the U. S. Steamer Franklin.

Stitt, E. R., Passed Assistant Surgeon. Detached from special duty and ordered to the U. S. Steamer New York.

Urie, J. F., Passed Assistant Surgeon. Detached from the U. S. Steamer New York and granted two months' leave of absence.

Young, L. L., Passed Assistant Surgeon. Detached from the U. S. Steamer Franklin and ordered to duty at the Naval Hospital, Norfolk, Va.

Society Meetings for the Coming Week:

Monday, *August 19th:* Cleveland Society of the Medical Sciences.

Friday, *August 23d:* Cleveland Medical Society.

Births, Marriages, and Deaths.

Married.

Heard—Earl.—In Buffalo, on Thursday, August 8th, Mr. Thomas Marsden Heard and Miss Ethel Agnes Earl, daughter of Dr. Wesley C. Earl.

Died.

Gauss.—In Rondout, N. Y., on Monday, August 12th, Dr. Henry Gauss, of Phœnicia, N. Y.

Lehlbach.—In Newark, N. J., on Wednesday, August 14th, Dr. Charles F. J. Lehlbach, aged sixty years.

Whitney.—In Brooklyn, on Wednesday, August 7th, Dr. Edward J. Whitney, in the fifty-sixth year of his age.

Letters to the Editor.

ANÆSTHESIA.

Bedford Springs, Mass., *July 31, 1895.*

To the Editor of the New York Medical Journal:

Sir: In the issue of your journal for the week ending July 20th you publish a paper entitled The Discovery of Anæsthesia, and the Alleged Relations between Dr. C. W. Long and Dr. P. A. Wilhite, by Luther B. Grandy, M. D., Atlanta, Ga.

My sympathies are certainly moved in behalf of Dr. Grandy, for he has labored hard to prove that the crude and meagre experiments said to have been performed by Dr. Long constituted the discovery of painless surgery, which Dr. Long himself denied and which he had no thought of claiming until urged to do so by his injudicious friends after the brilliant discovery and demonstration of Dr. W. T. G. Morton, at the Massachusetts General Hospital, Boston, on the 16th of October, 1846.

Dr. Long wrote: "I had no opportunity of experimenting with sulphuric ether in a capital operation.. Others more favorably situated * *engaged in similar experiments, and consequently the publication of etherization did not bide my time.*" An honest, manly confession, the truth of which should not be perverted for the manifest purpose of robbing the legitimate discoverer of anæsthesia of the great honor so richly his due.

Dr. Grandy, in a previous paper, in the *Virginia Medical Monthly* for February, 1894, said: "When Dr. Long, in 1849, saw that he was anticipated in the matter of publication, he began at once to collect the evidence of his own work."

May we not ask, Where was Dr. Long for seven long years that he did not make known and demonstrate the great discovery of anæsthesia to a suffering world? Where was the medical profession, that they knew nothing of the priceless blessing of painless surgery until after Dr. Morton's demonstration in 1846, which he published at once? Up to that day surgery was torture. Dr. Morton did not hide his light under a bushel for seven years and let the world suffer without relief while he held the secret locked in his own bosom. From his first demonstration at the Massachusetts General Hospital until his last, all were complete successes without one failure, and the world is indebted to Dr. Morton alone for its first demonstration and publication.

Dr. Wilhite says that he did etherize a negro boy to a state of complete anæsthesia in 1839. Dr. Wilhite was a member of the State board of health and was considered a reputable man and physician; but it is a matter of no importance whether he was or was not, so far as the discovery and demonstration of painless surgery is concerned, for the evidence is all in favor of William Thomas Green Morton, M. D.

Dr. Grandy points with pride to the statements of Dr. Marion Sims in favor of Dr. Long's priority in the discovery of etherization, while admitting that the testimony upon which Dr. Sims founded his paper was not in all respects true and to be relied upon.

Dr. Grandy publishes a letter from an anonymous physician of Florence, S. C., dated October 22, 1894, to Dr. Long's daughter, intended to invalidate the veracity of Dr. P. A. Wilhite, but to my mind it will have a contrary effect from what was intended.

In this connection I would call the attention of Dr. Grandy to an interesting paper in the *North Carolina Medical Journal* for July, 1895, by J. D. Blount, M. D., of Washington, D. C., entitled Anæsthesia. The following paragraph from Dr. Blount's article expresses the general conviction of the medical world: "Unfortunately, however, it remains for Dr. W. T. G. Morton, on the 30th of September, 1846, in Boston, to perform the first case of an anæsthetic operation under sulphuric ether."

Dr. Oliver Wendell Holmes wrote these telling words in the *Century Magazine* in 1893: "*The man to whom the world owes this priceless blessing is William Thomas Green Morton.*" And so history will write, notwithstanding the feeble efforts that are being made to wrest the honor from Dr. Morton.

W. R. Hayden, M. D.

Proceedings of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

Twenty-first Annual Meeting, held in Boston, on Wednesday, Thursday, and Friday, June 5, 6, and 7, 1895.

The President, Dr. Philip Coombs Knapp, of Boston, in the Chair.

(*Continued from page 26.*)

Hyperostosis Cranii.—Dr. James J. Putnam, of Boston, read a paper with this title, and reported four cases of this rare disease. He presented two of the patients, and showed photographs and specimens illustrative of the other cases and of the disease in question. The first part of the paper was devoted to a general discussion of the pathological questions and to the views expressed by Virchow, Baumgarten, and Starr. Hitherto, said the author, these enlargements of the cranium had been considered as of inflammatory origin, but the two writers last mentioned had brought forward some reason for thinking that the disease might be a species of trophic affection, distinctly analogous to myxœdema and acromegaly. This was an interesting hypothesis, but could not yet be accepted as proved. The symptoms of the disease were mainly due to pressure by bony masses on the cranial contents, especially the nerves and vessels which perforated the skull. There was often exophthalmia, due to partial obliteration of the orbit, and usually there were some signs of paralysis or irritation of cranial nerves. Epileptic attacks occasionally occurred, and sometimes very early in the disease. Double optic neuritis and other signs of intracranial pressure might be present, and there was almost always headache, due to the interstitial bony changes. The head was sometimes enormously enlarged, and when, as frequently happened, the bones of the face were involved, peculiar deformities might be present, such as suggested to Virchow the name leontiasis ossea. Photographs of a specimen in Washington, illustrating this form of the disease, were exhibited.

Baumgarten had pointed out that the disease generally began in youth, and in one of the author's cases the first indications had been noticed when the patient was five years old, in the form of two exostoses near the vertex, which afterward had assumed a great size. The cranial bones usually became very dense, as from an inflammatory change, but sometimes the diploe was rarefied. The question of operation suggested itself as a means of reducing intracranial pressure or of cutting off the blood supply to the bone. In this connection it might be noted that the channels of the meningeal vessels were sometimes strongly marked, sometimes nearly obliterated.

Dr. Starr, of New York, said that these cases were more advanced and more extreme than those he had reported. He had tried thyreoid extract in one of his cases without benefit. He had been led to do this as he had seen some improvement after its administration in a patient with acromegaly.

Dr. Morton Prince narrated the history of a case in which this condition of the cranium had followed a traumatism which had occurred two years before. The enlargement had not been general, but had been mostly confined to the frontal bone. At the autopsy, the orbital plates had been found enormously enlarged and the anterior portion of the brain had undergone extreme compression.

Dr. G. M. Hammond, of New York, asked if structural changes had existed in other bones. He reported a case of syphilitic origin in which there had been nodosities and other enlargements of the long bones.

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* The Italics are mine.

Dr. PUTNAM thought that when syphilis was present these cases should be placed in a different class. There was a tendency to bony enlargements in these cases.

Dr. F. T. MILES, of Baltimore, showed the brain of a child, three years and a half old. It was that of an idiot who had had left hemiplegia. The right cerebral hemisphere had been atrophied to a great degree in all its lobes and convolutions, and the right crus was small. The left cerebellar hemisphere was a third smaller than the right.

Dr. H. L. WORCESTER, of Danvers, had made autopsies in three cases where there had been decided asymmetry of the cerebral hemispheres, but the cerebellum had presented no abnormity.

Dr. CHARLES K. MILLS had reported some years ago the case of a negro murderer in whom there had been atrophy of one cerebellar hemisphere with opposite cerebral atrophy.

Dr. STARR said that this condition was usually congenital and was often found in idiots.

Dr. EDWARD B. ANGELL, of Rochester, had seen a similar condition at an autopsy of a person, thirty-three years of age, in whom a cyst of the cerebrum had existed since childhood.

Cortical Localization in the Light of Recent Researches into the Minute Anatomy of the Cortex.—Dr. CHARLES K. MILLS read a paper on this subject in which he said that the different theories as to the separate cortical localization of movements and of cutaneous and muscular sensation, which had been the subjects of so much controversy, had again become prominent in the light of the researches founded upon the methods of Golgi, and particularly those made by Ramon y Cajal, van Gehuchten, Schafer, Andriezen, and others. Those who contended against the doctrine that the Rolandic cortex was a purely motor region believed that they had received additional support for their views. The varying hypotheses with reference to the functions of the cortex were reviewed. The author held that, as shown by Forel and Nansen, we had been too long handicapped by prevailing ideas of cell action and by theories of the parts played by the cell bodies as originating centres. Impulses were transmitted and transferred by processes as well as by cell bodies, and the function of the latter was chiefly trophic. The new researches and theories, he believed, did not call for an abandonment of former views as to special localizations, although different standpoints had been taken. Disregarding theory entirely, he believed that the subdivision of the cerebrum into physiological lobes remained, for the practical purposes of the physician and surgeon, the best. While the whole of the cortex in some of its strata might be regarded as a sensory expanse, the Rolandic portions, and particularly the convolutions cephalad of the central fissure, constituted a region which was related to specialized movements of various parts of the body. One called it motor, another kinæsthetic, another sensori-motor, and another executive, but for the purposes of the physician and surgeon it was a motor sphere, the irritation of which caused specialized movements, while its destruction impaired or abolished these movements. He did not believe with Andriezen that it was necessary to regard the ambiguous and great pyramidal cells of this region, whose apical processes received the terminals of the fillet radiations, as the first sensory cells of the cortex. Indeed, he regarded it as important to rid ourselves entirely of the idea of *sensory cells* and *motor cells*. The cortex contained localized *areas*. To abandon separate sensory and motor localization it would, he believed, be necessary to abandon the visual, auditory, gustatory, and other subdivisions of the cortex. The cerebral sensory area —the area of representation for skin and muscle sensations—both cortical and subcortical, would be, from his point of view, that part of the cerebrum where the fillet radiations in their most compact forms were nearest to the surface of the brain, and therefore this region might continue to be described as it had been by him, as in the postero-parietal, quadrate, and fornicate convolutions. Destruction of this region, especially if bilateral, caused more or less impairment of sensation. He referred to cases reported by Savill, Sharkey, Starr, McCosh, and himself as confirming this view. In the cerebrum, as in the spinal cord, there were fields of junction between so-called cortical areas, and lesions of these fields of conjunction, or at the terminations of the sensory projection fibres, might give rise to temporary sensory phenomena, but persistent sensory disturbances were found only when the lesions involved the convolutions included by him in the general sensory area.

Dr. DANA said the author had not referred to or tried to explain the facts which established the proposition that he believed regarding this subject. Dr. Dana said he had collected a number of other cases and had added some of his own, and it was because he could not explain the clinical facts or the pathological facts by any other hypothesis than by supposing that the motor and sensory functions were practically united that he still held to that view. He asked Dr. Mills to explain why, when we cut away a section of the mid-central or precentral convolution, we found tactile anæsthesia and muscular anæsthesia the next day, with paralysis, on any theory except that these two functions were united in that spot. These cases were extremely numerous in the literature of neurology. If we carefully shaved off the anterior precentral convolution in the middle part, there would be sensory disturbances and anæsthesias.

Dr. Mills might not perhaps be aware, he said, that in the living subject the motor cortex had been directly irritated, also the part in front of the fissure of Rolando, and this had produced sensory and motor disturbances. If a man's sensory functions were localized and the cutaneous sensations and muscular sensations were situated in the gyrus fornicatus, he did not understand how the passage of the electric current should cause sensations entirely analogous in the arm to those of the tactile impression made upon the skin; in fact, the whole weight of clinical evidence was in favor of that view; the surgical operations, the tumors, the softenings, all were facts which could not be explained on any other hypothesis, so far as he knew, than that the two functions were essentially identical in their seat.

It was a plausible theory that the visual centres, the centres for visual sensation, and the auditory and gustatory sensations were separate from the motor sensations, and they and the cutaneous and muscular sensations would naturally have separate centres; but it did not at all hold against any actual facts, and when we came to analyze it, it was not so necessary or plausible after all. The visual sensations were not so closely related to motions as the cutaneous and muscular sensations were. For the performance of co-ordinated movement, there must be a very close anatomical relationship between the muscular and cutaneous sensations.

Perhaps if we were all agreed as to exactly what was meant by sensations, and exactly what tests we used for making sensations, and were agreed about the terminology of our discussions, we should not have so much discussion about this matter. He agreed with Dr. Mills that sensations were not closely localized, and thought that we should speak of sensory areas, but he did not believe that there were sensory areas separate from the motor ones back in the post-central and parietal lobes or in the gyrus fornicatus. He did not accept Dr. Starr's view that the sensory centres were back of the fissure of Rolando, for, from the evidence he had been able to collect, there was just as much proof that the precentral convolution had sensory functions as that the post-central one had.

Dr. Putnam thought Dr. Dana's closing sentence must be accepted as absolutely true, that the convolution in advance of the fissure of Rolando, which we ordinarily associated with the localized movements, had as much to do with sensation as convolutions anywhere else had. In support of that statement he mentioned one case among many where Dr. Warren had excised a minute piece of the cortex of a young man with epilepsy beginning in one hand—a piece a few millimetres in diameter—with the result of producing paresis of the hand, paralysis in the beginning, and also a disturbance of the sensibility of the whole hand. It seemed to him that showed in some way that function of the sensibility was closely related to the same centres with the function of motion. What that relationship was was a matter still calling for a great deal of study. His own view of the difficulty was that we were still decidedly lacking in a sufficient physiological or psychological conception of what we meant by these various terms. The function of sensibility must be very widely distributed. When any part of the body was touched or any motion took place there, it called immediately on various other functions to come into action. The motion of the eyes must follow very rapidly on a sensation, because the individual touched must immediately know from what cause the touch arose, and the like; so that close relationships must be established, and, as a matter of fact, we had every reason to think they were established with all sorts of cerebral functions of various kinds. When we applied sensory stimulus we were applying what might perhaps be a very gross molecular disturbance of a nerve to the part touched, and then it impinged on some part of the brain primarily, and from there it must spread; just as in the spinal cord a sensation would make its way from a minute portion of the substance of the cord, so in the case of the brain, if one channel was cut off it would make its way into a dozen other channels. In one case an enormous tumor, almost as large as an orange, had been removed. It had lain directly in the motor tract, and in the course of the operation Dr. Richardson had put his finger down and thought he had felt the falx and various recognizable bodies at the base of the brain (if not of the skull, at any rate, of the brain); in short, it must have been that the whole of the motor area had been removed with a good part of the internal capsule. Nevertheless, the patient still had a very considerable degree of sensation left, of course modified; but, in the first place, contact gave rise to a painful distressing feeling, contact with the paralyzed parts; in the second place even a slight rubbing was felt, and the localization was still fairly good. The patient could feel in a very high degree, so that, although the removal of the motor convolution had affected the sensibility of the limb, it had not by any means destroyed it. Nerves would stand great injury, sufficient to entirely destroy their motor functions, without interfering materially with their sensory functions. It was the same in the spinal cord; a minute portion of it would convey centripetal impressions. We had it in our own power to make what might be a tremendously powerful thrill as compared with the little one corresponding to a motor impulse originating in a voluntary act; so also in the brain it took a very extraordinary degree of mutilation to entirely destroy sensibility.

Although we must admit, Dr. Putnam said, that the function of sensibility was closely related to the function of localized motion, we must admit also that it was closely related to a great many other functions, and it remained to be seen whether, as in the case of the relation of the muscles of articulation to the function of speech, there was any centre which was highly specialized. He had in mind several cases where the sensory functions had been disturbed in connection with paresis of one hand, where he had seemed to be able to detect a higher degree of loss of sensibility or impairment of sensibility on the side of the ulnar part of the hand than on the median portion.

Dr. Starr said that Dr. Dana had stated what was indisputable, and those who were constantly seeing cases of cerebral surgery were perfectly positive that a small limited area of the so-called motor zone did inevitably produce in almost every case more or less disturbance of sensation. He said he had been completely mistaken in 1890 when he had maintained that sensations were only to be referred behind the fissure of Rolando. He agreed with Dr. Dana completely that there were sensations produced by small lesions anterior to the fissure of Rolando, and that the sensory area of the body corresponded exactly with the motor area of the body so far as we could determine clinically. He thought it would be a mistake to draw too broad a conclusion from these facts.

It was perfectly evident that the term diffusion of sensibility was a capital one, and our present anatomy showed why it was. It was because these sensory fibres terminated in brushlike expansions, so that we must conceive of a sensory fibre as virtually extending in a long region of the nervous system, in fact, almost throughout its entire length. Now suppose that, with the continued passage of sensations over these fibres diffusing themselves, habit opened the way in one direction rather than in another, that a sensation coming in might be diffused from the arm over the entire parietal arm centre and also diffused over the motor centre; but, inasmuch as we guided our movements by touch habitually, the result was that a greater passage was opened to the motor zone. Diffusion of the sensibility in various areas gave an explanation of the fact that a few cases were on record where sensations only were lost, and the vast majority of cases showed that both sensation and motion were lost. We must abandon the idea of consciousness and conscious perception and perhaps, to some extent, of conscious motion being associated with particular cells. It was just as reasonable to believe that it was associated with association-fibre action the combined activity of various areas of the brain, as it was with single cells, and he thought we should come down finally to the fact that a cell was to be regarded more as a trophic centre than as a motor or sensory.

Dr. Dercum said that the stand that had been taken enabled us to explain certain other phenomena not alluded to here—namely, the fact that the cuneus atrophied in cases of blindness lasting for many years. Certainly we had no right to conclude from these facts that the cuneus only saw. It was probable it did other things. The various centres of the cortex, as we knew them clinically and pathologically, were simply highways of ingress and egress to the general cortex. It gave us no right to say that this portion of the brain might do this special thing, and that portion that special thing. General biological considerations also would negative the sharp distinguishing of cells into those with special functions. Nerve protoplasm reacted to certain forces; to say one cell would react to one mode of motion and another to another was unphilosophical and not borne out by general biological considerations.

Dr. Richardson said, in reference to the operation he had performed, that, so far as he knew, there had been no destruction of the motor areas except by pressure of the growth.

The tumor had been very large, and it had taken up a very large portion of the left hemisphere. During the operation he had touched the falx throughout a great deal of its extent, his finger passing through a very large opening through the crista galli to the tentorium. But, so far as he knew, there had been no destruction of brain tissue by manipulation during the operation. The man was now doing very well.

Dr. Collins had recently had a case of cerebral surgery in which the development of sensory and motor defects had been rather peculiar. The young man had had his first attack of Jacksonian epilepsy in November, and the movements had been contraction of the finger and thumb. When the speaker had seen him in March he had had three. In conjunction with Dr. Sachs, Dr. Gerster had operated on the patient over the superficial cortical thumb and index-finger centre. As the patient had borne the anæsthetic very badly, it had been necessary to postpone the operation after the skull had been opened; cutting into the cortex had been deferred. That night the patient had had an extremely severe attack, which had been preceded a short time by a very high temperature and loss of consciousness for a long time. On the following morning he had had paresis of the right upper extremity and loss of tactile sense, loss of sense of position, and loss of muscular sense in the right hand. Three or four days afterward the dressings had been opened and a good deal of distention had been found from effusion into the surrounding cellular tissue, but otherwise the site of the operation had seemed very much like the normal. Then a large part of the cortex had been cut out. An old pachymeningitis had been present, and the Nissl stain had revealed degeneration of the cortical cells. The patient had been put to bed and his hand tested for sensibility that evening. The disturbances of sensation had all disappeared. These observations had been made with extreme care.

(To be continued)

OREGON STATE MEDICAL SOCIETY.

Twenty-second Annual Meeting, held in Portland on Tuesday and Wednesday, June 11 and 12, 1895.

The President, Dr. J. A. Fulton, of Astoria, in the Chair.

(Continued from page 89.)

Gonorrhœa in Gynæcology.—In a paper thus entitled Dr. H. R. Holmes, of Portland, spoke of the importance of informing the laity of the dangers of latent gonorrhœa. The man who had once had gonorrhœa should never marry unless he had first consulted a specialist in venereal diseases. If greater care were taken in such things there would be much less suffering among women, and much less occasion for many of the formidable gynæcological operations.

Membranous Enteritis.—Dr. O. D. Doane, of The Dalles, read a paper on this subject. He said that membranous enteritis was a remarkable and somewhat rare disease the characteristic feature of which was the passage from the bowels, at more or less frequent intervals, of large quantities of tenacious mucus. This varied in form and consistence from irregular flakes, strings, or masses of feebly coagulated matter to fully formed and seemingly organized molds or casts of the bowel in which they were produced. The pathology of this disease had not been definitely settled, but the source of its characteristic product was generally conceded to be the muciparous glands of the colon, which under some abnormal stimulation poured out an abundant secretion that subsequently passed through a process of solidification and at times of an apparent organization.

The different forms observed probably depended upon the varying chemical conditions of the intestinal secretions and contents, also upon the length of time which might elapse before the mucous exudation was separated from the wall of the intestine and finally extruded from the bowel.

The affection had been described under various names by most writers on practice, most thoroughly in the article on Pseudo-membranous Enteritis by Dr. P. S. Wales, in the second volume of Pepper's *System of Medicine.*

The disease was non-febrile, although painful and at times violent gastro-intestinal disturbances accompanied it. Though not confined to any age or either sex, it occurred most frequently in young or middle-aged women of nervous temperament, and was usually preceded or accompanied by hysteria, melancholia, or some other manifestation of the neurotic constitution. Quite frequently there had been antecedent dysmenorrhœa or some uterine or ovarian disease.

The prognosis was not encouraging, for, though seldom directly fatal, the disease usually became chronic and, as with nervous affections, unless some radical change could be effected in the patient's circumstances and surroundings, there was little prospect of ultimate cure.

The treatment consisted in the use of anodynes and quieting measures to relieve the more painful symptoms, the administration of the various mineral and vegetable alterative tonics, and nourishing alimentation.

The author gave a history of an illustrative case which had recently come under his notice.

The Immediate Repair of Lacerations of the Cervix Uteri.—Dr. F. M. Robinson, of Beaverton, read a paper on this subject. It was conceded, he said, that it was good surgery to repair an injury to any part of the human body just as soon as possible after it was received, and he did not see why a laceration of the cervix should be an exception to the general rule. The dangers from neglect of immediate repair were many, and among them were hæmorrhage and puerperal fever. All our leading gynæcologists were agreed that subinvolution and all its sequelæ were the result of ununited lacerations. Many of these living monuments of our disgrace were operated upon every year by gynæcologists, and restored to health and home after having for years suffered a living death. No one but the late Dr. Pallen had raised his voice or pen to say that all this sad picture might have been avoided by a few sutures taken in the cervix at the time of injury. One of the chief reasons for this delay was that advanced by most text-books and teachers, that we did not know how much Nature would do unless we waited to see. It had been the author's misfortune to settle in a part of the country remote from a physician, so that when one was called the case was indeed urgent. Those that were in the hands of the women or nurses of the neighborhood got on as best they could, therefore such a thing as stitching a perinæum or cervix was unknown. When the author settled where he was now practising he found that all such cases had been left to Nature, and, while he did not pretend to know what Nature would do in repairing injuries to the cervix, he knew altogether too much about what she would not do to trust anything to her care that he felt confident that he could attend to himself. Other reasons why immediate repair of the cervix had been so long neglected by the profession were lack of skill by the general practitioner to diagnosticate and remedy such injuries; the prevalent idea of trusting to Nature rather than to surgery, and of going into the lying-in chamber totally unprepared for such emergencies; the fallacy that septicæmia seldom occurred in the lying-in woman unless introduced from without; and fear of shock and post-partum hæmorrhage from the use of an anæsthetic. The author was of the opinion that there was not a well-founded excuse among them. There was not a man who was capable of obtaining a diploma from any of our leading medical colleges who could not, by exercising his knowledge of aseptic surgery, prevent the introduction of septic matter into the vagina or uterus. He was satisfied that all graduates from good schools, if they had only had a few lectures on the subject, and felt that the moral support of the profession was behind them, would soon successfully operate on all lacerations of the cervix at once. It was the author's method, after removing the placenta, to wash and thoroughly cleanse the hands, and insert two or three fingers of the right hand into the vagina while with the left hand he made firm pressure over the fundus. Then, beginning at the left side of the patulous cervix, he palpated each sulcus from the body to the extremity of the lip. In this way, if there was a laceration it could be found. By palpating the rim of the cervix a very small rent could be detected. If there was a separation of the tissues, not including the vaginal portion of the cervical membrane, and reaching up to the internal os, it was sutured from above downward to the edge of the lip. One of these blind rents was as apt to give trouble as a complete one, and they were far more liable to escape detection. For this sort he used a small curved needle and a continuous suture, taking great care to approximate the two edges of the mucous membrane inside the cervical canal. If he found a bilateral laceration reaching up to the fornix on one or both sides, the patient was anæsthetized, her hips were drawn to the edge of the bed, and she was placed in Sims's posture. The vagina was douched out with a 1-to-5,000 bichloride-of-mercury solution, afterward with hot sterilized water. The perinæum was then drawn back with a Martin's or Sims's retractor, the anterior and posterior lip were caught with a bullet forceps, and the cervix was drawn into the vulvar opening, firm pressure being made over the fundus by an assistant. All shreds were cut off, making a clean edge, and a short flat needle was used for inserting the sutures, which were introduced at a considerable distance from the edge of the tear. Two points were particularly emphasized: one was to include sufficient tissue on each side of the rent, and the other was to draw the stitches tight enough, so that when retraction of the cervix took place they would not be so loose as to militate against union. The vagina and cervix were then thoroughly douched, the external genitals were cleansed, an antiseptic pad was placed against the vulva, and the patient was placed in bed. Union would in all cases be by first intention and the cervix would be as smooth and round as it had been before the laceration, if these details were followed out. The primary operation lessened the chances of septicæmia. The procedure was as justifiable as the immediate repair of the perinæum, and as far-reaching for good to the patient. It hastened involution, prevented subinvolution and displacements, and enabled the uterine supports to perform their function, which they could not do when handicapped by a subinvoluted and abnormally heavy organ.

Dr. MOORE did not practise immediate repair, because drainage could not be so good. He always repaired the perinæum at once, but not the cervix.

Dr. TUCKER liked the immediate operation and was glad to find that Dr. Robinson had been doing it for the past five years. He thought that many of the low-grade sepsis cases were due to absorption through the torn tissues. The only objection he felt to the operation was the beginning over again of something distressing to the patient when she had just gone through a siege.

Dr. STRONG had found that frequently where the cervix was examined immediately after labor it appeared to be badly lacerated, but if let alone until involution had taken place it would be found to be in good condition.

Dr. MACKENZIE did not favor the immediate operation, for he was satisfied from the universality of opinion against it that there must have been some very good reasons for such conclusion, and that it had not been condemned without serious consideration first. The character of the tissues was such as to militate against primary union. Again, where there were continued oozing, hæmorrhage, and altered secretions primary union could not be expected.

Dr. WILLIAM JONES, of Portland, thought that if the laceration was considerable there was no good reason why the operation should not be done. He thought it a good expedient if it saved the woman the after-annoyance and expense of a later operation. Nature did much to repair ordinary injuries of the cervix, but he did not see why immediate union might not take place in the cervix as well as in the perinæum.

Dr. CARDWELL, of Portland, had had considerable experience in this class of work, and thought that in selected cases the operation was advisable. The process of involution might interfere with primary union. It was hard for a woman when she had had a long, tedious labor to have to be anæsthetized and go all over the ground again, but if the patient was under the anæsthetic and a laceration of some account was found, the speaker would repair it at once.

Dr. GIESY did not think that the question of septicæmia ought to be brought up, for it was so rarely seen nowadays. He did not think that a laceration was necessarily a factor in puerperal fever. He thought the objections to the operation great, both to the patient and to the physician, for after a tedious labor the patient was exhausted and so was the physician. He would dislike to give or receive an anæsthetic at such a time. He had seen the procedure tried, and great hæmorrhage had been the result, for at such a time the heart was weak and the blood-vessels were relaxed.

Dr. DOANE wanted to accentuate the fact that readministration of an anæsthetic had caused dangerous post-partum hæmorrhage. Where the condition of laceration was extreme and something must be done, that was another matter.

Dr. ROBINSON had invariably found the vault of the vagina lacerated. He had found that where the laceration was extensive the uterus did not contract when the tear was left ununited. He had never seen Nature repair a laceration which had extended through the internal os.

(*To be continued.*)

Book Notices.

The Female Offender. By Professor CÆSAR LOMBROSO and WILLIAM FERRERO. With an Introduction by W. DOUGLAS MORRISON, Her Majesty's Prison, Wandsworth. Illustrated. New York: D. Appleton & Co., 1895. Pp. xxvi–313.

MR. MORRISON, in his introduction to this work, repeats the question that has been asked by many sociologists, as to whether our existing penal systems protect society against crime, and he at once confesses that they do not. With an expenditure in Great Britain of at least ten millions sterling, and of a greater amount than that in the United States, it would seem that crime should be restricted in those countries; but in the United States there has been an increase out of all proportion to that of the population. It is not held that this failure of existing methods of criminal legislation and administration is to be accepted as a proof that the organized forces of society are confronted with an incurable disease in the body politic, but rather that the failure indicates the necessity of placing the entire penal system upon a more rational foundation.

While penal laws assume that the criminal is existing under the same set of conditions as an ordinary man, the fact is that a high percentage of criminals live under anomalous biological and social conditions, which act upon the offender either independently or in combination. As the editor says, a legislative and administrative system that is formulated to meet one set of conditions will not be successful if in practice it is called upon to cope with a totally different set.

One of the chief causes of failure of criminal legislation is the fallacy that an offender is an ordinary man, and that each offender who commits the same offense is to be punished in the same way. It has been Lombroso's purpose to show that penal methods should be adjusted to the social and biological condition of the offender, as well as to the nature of the offense, as was urged by Bentham.

Lombroso's former investigations showed that the habitual criminal was to be distinguished from the average member of the community by a much higher percentage of physical anomalies, including malformations in the skull, brain, and face and abnormities of the eye, ear, nose, mouth, and limbs. Besides the physical, there are certain mental anomalies, embracing an absence of moral sensibility, general instability of character, excessive vanity, extreme irritability, a love of revenge, and an atavistic tendency to customs and pleasures similar to the orgies of uncivilized tribes. According to Lombroso, the habitual criminal stands midway between the lunatic and the savage.

The anthropometry of female criminals indicates that their stature, stretch of arms, and length of limb are less than normal, and the average weight of prostitutes and murderesses in proportion to their height is greater than that of normal women. Prostitutes have longer hands, bigger calves, and smaller feet, their cranial capacity is less, and their facial diameters are larger as compared with normal women. Yet he found fifty-four per cent. of female offenders absolutely normal.

The reflexes of prostitutes are slower than in the male criminal, a result that Lombroso thinks may be due to the direct action of syphilis on the nervous centres. Dullness of sense (except of touch) and visual anomalies are commoner among prostitutes than among female criminals.

Lombroso considers that a woman born to a life of crime is doubly exceptional, both as a woman and as a criminal, because criminals are an exception among civilized people, and women are an exception among criminals. The natural form of retrogression in women is prostitution rather than crime, because the primitive woman was impure rather than criminal. While women are very rarely criminal when compared with men, yet when they are criminal they are infinitely worse than criminal men.

In female criminal lunatics Lombroso finds the reverse of all the qualities that specially distinguish the normal woman —namely, reserve, docility, and sexual apathy.

The volume is an interesting contribution to a subject that is by no means exhausted. If fifty-four per cent. of female offenders are absolutely normal in respect to features and characteristics, it is difficult to understand how much value can be attached to the stigmata of degeneration, especially as the latter are common to the lunatic, the epileptic, the alcoholic, the habitual pauper, and the female offender, be she prostitute or criminal.

The Eye in its Relation to Health. By CHALMER PRENTICE, M. D. Chicago: A. C. McClurg & Company, 1895. Pp. 7 to 214.

THE author professes to have cured diabetes, insanity, paralysis resulting from apoplexy, phthisis pulmonalis, rheumatism, asthma, prostatitis, spasmodic stricture of the neck of the bladder, oophoritis, sterility, glaucoma, atrophy of the optic nerve, Bright's disease, cirrhosis of the liver, constipation, sciatica, chorea, and deafness by rendering the eyes artificially myopic with strong convex glasses, and at the same time preventing binocular single vision by means of prisms too strong for the ocular muscles to overcome, together with an occasional tenotomy. The whole argument of the book is the logical continuance of the arguments so continuously advanced by too many writers of to-day, who cut themselves free from the foundation of anatomy and physiology and seem to find in the eye and its extrinsic muscles the source of all the ills to which flesh is heir, and therefore a panacea in the treatment of the errors found in that organ and its appendages.

BOOKS, ETC., RECEIVED.

Leprosy in its Clinical and Pathological Aspects. By Dr. G. Armauer Hansen, Inspector-general of Leprosy in Norway, and Dr. Carl Looft, formerly Assistant Physician to the Lungegaards Hospital. Translated by Norman Walker, M. D., F. R. C. P. Ed., Assistant Physician for Dermatology, Edinburgh Royal Infirmary. With Numerous Photographs and Colored Plates. Bristol: John Wright & Co., 1895. Pp. xi–160. [Price, 10*s.* 6*d.*]

Assistance, traitement et éducation des enfants idiots et dégénérés. Rapport fait au Congrès national d'assistance publique (session de Lyon, juin, 1894). Par Bourneville, médecin de Bicêtre, etc. Paris: Félix Alcan, 1895. Pp. ii–246. (Bibliothèque d'éducation spéciale. IV.] Publications du *Progrès médical.*

Contribution à l'étude de l'atrophie musculaire progressive. Type Duchenne-Aran. Par le Dr. J. B. Charcot, ancien interne des hôpitaux. Paris: Félix Alcan, 1895. Publications du *Progrès médical.* Pp. 159.

Die Physiologie des Geruchs. Von Dr. H. Zwaardemaker, Stabsarzt-Docent in Utrecht. Nach dem Manuscript übersetzt von Dr. A. Junker von Langegg. Mit 28 Figuren im Text. Leipzig: Wilhelm Engelmann, 1895. Pp. vi–324.

The American Academy of Railway Surgeons. Official Report of the First Meeting held in Chicago, November 10 and 11, 1894.

Adenoid Growths in the Vault of the Pharynx and their Relation to Diseases of the Middle Ear. By Hal Foster, M. D., Kansas City, Mo. [Reprinted from the *Kansas City Medical Index.*]

Remarks on Some of the Features of the Grippe and Influenza. By E. L. Shurley, M. D., Detroit. [Reprinted from the *Physician and Surgeon.*]

First Impressions of a Medical Examiner. By Edward Cranch, M. D., Erie, Pa. [Reprinted from the *Homœopathic Physician.*]

A Second Attack of Papillitis occurring in a Case of Postneuritic Atrophy of the Optic Nerves. By G. E. de Schweinitz, M. D., and A. G. Thomson, M. D., Philadelphia. [Reprinted from the *Archives of Ophthalmology.*]

The Treatment of Advanced (Hopeless) Cases of Phthisis. By Edward O. Otis, M. D., Boston. [Reprinted from the *Boston Medical and Surgical Journal.*]

Treatment of Asiatic Cholera. By Elmer Lee, M. D., Chicago. [Reprinted from the *Journal of the American Medical Association.*]

La diphtérie de l'adulte à l'hôpital Lariboisière. Par le Dr. A. Gouguenheim, médecin de l'hôpital Lariboisière. [Extrait des *Annales des maladies de l'oreille, du larynx, du nez et du pharynx.*]

Miscellany.

A Case of Aphasia following an Attack of Grippe.—The *Nouveau Montpellier* for July 20th publishes an article by M. Dargelos in which he gives an account of the case of a woman, fifty-three years old, who had a lymphatic temperament and was arthritic without showing any symptoms of arterio-sclerosis. Menstruation, which had not taken place for six years, had ceased without other troubles setting in, except a return of muscular rheumatism, from which she had suffered sometimes, and sciatica.

On the 8th of February she was taken with slight chills and frontal headache, and she was obliged to go to bed. Her temperature was 103° F. Eight grains of antipyrine and eight grains of Dover's powder were given, also some bouillon. In the evening the headache disappeared, but very sharp colic set in, and the temperature was 104°. During the night she had a severe attack of diarrhœa with terrible pain. A hypodermic injection of morphine was then given, also a mixture of six grains of bismuth salicylate, three tenths of a grain of crude opium, and three grains of benzo-naphthol, in capsules, every three hours. Toward morning the diarrhœa and the pain ceased and there was profuse perspiration.

On the 9th there was a complete fall of temperature and no uneasiness, except a little fatigue and sleepiness. The use of the medicines was stopped, and a milk diet given. The general condition remained about the same for the next two days, when early on the morning of the 11th the patient was found on a sofa with her arms hanging, her face pale, the mouth slightly drawn to the right, and the eyes half open. She was not able to speak or to move. In the evening, however, the power of speech returned a little, and the mouth regained its shape. Plasters were applied and laxative enemata given. Nine grains of valerianate of quinine and forty-five grains of sodium bromide were given. The temperature was 99·7° and the pulse 68. At noon of the same day the patient was able to say yes and no and to move all her limbs. There was pain in the right side of the head, but no trace of paralysis in the muscles of the eyes. The pupils were sensitive to light and the left pupil appeared to be more contracted than the right. The mind was perfectly clear. There was, however, complete anæsthesia of the entire right side, and a marked difference in the temperature of the two sides. The author made local applications of the thermometer with the following results: Temperature of the left arm, 95·9°; temperature of the right arm, 91·2°; temperature of the left thigh, 95°; temperature of the right thigh, 92·6°. A bottle of smelling salts was held to the patient's left nostril and she recoiled, but its application to the right nostril had no effect whatever. The right cheek was equally insensible. The pupils were sensitive to light and the right one was manifestly contracted. The conjunctivæ were normal and without injection. Both eyes seemed sensitive, although the reflex was more marked in the left eye. Revulsives were applied to the lower limbs, and the use of the bromide and the quinine was continued.

On the 12th the pulse was the same, and the temperature 98·3°. The anæsthesia persisted and the mind was clear, but the patient could not speak. On the 13th the condition remained the same. On the 14th the patient appeared to be better, and she was able to pronounce and to write a few words. The right arm had more warmth in it, and the difference in temperature of the two sides was not so great. The patient was able to feel the hypodermic injections on the right side. On the 15th the temperature was the same on both sides, and the anæsthesia had entirely disappeared. She was able to speak connectedly, although she would occasionally become confused and use wrong words. During the next four days the amelioration was marked. On the 20th the patient left her room and walked a little. By the 14th of March there was a great improvement; the same treatment was continued, with the addition of a little solid food in the middle of the day. There was no albumin in the urine. On the 31st of March recovery seemed to be complete. At no time, says the author, were there any symptoms of hysteria observed.

In this case, says M. Dargelos, it was a question of a complex transitory aphasia following a pyrexia of short duration, which, he thinks, was that of *grippe*, as there was an epidemic of that disease at the time.

Ozone in the Treatment of Whooping-cough.—At a recent meeting of the *Société française d'électrothérapie*, a report of which appears in the *Progrès médical* for July 20th, M. Labbé and M. Oudin, referring to a former communication, said that they had demonstrated the favorable influence of ozone on the blood and on nutrition; also its antiseptic action, and they thought that, as whooping-cough was evidently a microbian affection, it would be well to try the effect of ozone in the treatment of this disease. They had collected twenty-two observations of cases of children who had had whooping-cough and had been treated exclusively with inhalations of ozone. The results of the examination of these cases had shown very convincingly that the use of the ozone had produced an immediate amelioration in the little patients. The spasms of coughing had been rapidly modified, not only in frequency, but also in intensity and duration. The respiratory troubles, the cyanosis, and the vomiting had almost entirely disappeared. The general condition, said M. Labbé, naturally felt this favorable modification; the children recovered their spirits, their appetite, and their former healthy appearance. None of M. Labbé's patients had been attacked with the broncho-pulmonary complications which were so often observed in this disease. The principal facts observed after the inhalations of ozone were the rapid diminution of the duration, the intensity, and the number of attacks of coughing, and the modification of the general condition of the patients. The authors thought that in whooping-cough ozone seemed to have a special antiseptic action.

External Applications of Pilocarpine in the Treatment of Nephritis.—The *Annales des maladies des organes génito-urinaires* for July contains an abstract of an article published in the *Concours médical*, by M. H. Mollière. In cases of acute and chronic nephritis, says the writer, provided there is no threatening of uræmia, it is well to employ frictions over the entire trunk with an ointment composed of a grain and a half of nitrate of pilocarpine and three ounces of white vaseline, after which the parts are covered with cotton. When the patient becomes too wet from perspiration, the cotton is removed and a fresh application of the ointment is made. This treatment should not be suspended, except in cases where the patients are too weak. Then it is interrupted for forty-eight hours, after which it is continued, but with an ointment containing only half the original quantity of nitrate of pilocarpine. With regard to the quantity of ointment to be used at each application, it varies according to the size of the patient, from three hundred to six hundred grains being used at a time. The amount indicated in the formula generally suffices for three or four applications.

The Medical Society of Virginia.—The twenty-sixth annual meeting will be held in Wytheville, on September 3d and 4th, under the presidency of Dr. R. J. Preston, of Marion. The programme includes the following papers: The President's Address, by Dr. R. J. Preston; An Address to the Public and to the Profession, by Dr. Lewis G. Pedigo, of Shawsville; Vesical Calculus in Women, by Dr. Z. V. Sherrill, of Bland C. H.; Laparotomy, with a Report of Cases, by Dr. James N. Greear, of St. Paul; Strychnine as a Heart Tonic, by Dr. C. K. Kernan, of Lebanon; Convulsions, by Dr. W. S. Sayers, of Wytheville; The Treatment of Cholelithiasis, by Dr. George Ben Johnston, of Richmond; Pelvic Inflammations, by Dr. J. W. Long, of Richmond; Uric Acid as a Gynæcological Factor, by Dr. T. W. Simmons, of Martinsville; The State Provision for Epileptics, by Dr. William F. Drewry, of Petersburg; Obstruction of the Bowels, by Dr. Hugh M. Taylor, of Richmond; Puerperal Sepsis, by Dr. Paulus A. Irving, of Richmond; Seventeen Operative Cases of Chronic or Relapsing Appendicitis, with One Death, by Dr. Hunter McGuire, of Richmond; Varicocele, by Dr. B. C. Keister, of South Boston; The Galvanic Current in the Treatment of Pelvic Pain, by Dr. J. Allison Hodges, of Richmond; Abscess of the Liver in Children, by Dr. R. M. Slaughter, of Theological Seminary; A Long Survival after Injury of the Spinal Cord in the Cervical Region, by Dr. James L. Kent, of Bertha; The Pathology and Treatment of Gonorrhœa, by Dr. Charles M. Blackford, of Lynchburg; The Symptomatology, the Ætiology, and the Treatment of Endometritis, by Dr. George Tucker Harrison, of New York; A Case of Cerebral Trauma—Indistinct and False History—Remarks on the Diagnosis and Treatment, by Dr. M. J. Payne, of Locust Grove; Eye Troubles in their Relation to Diseases of Other Organs, by Dr. Joseph A. White, of Richmond; Pyæmia and Septicæmia in their Surgical Aspects, by Dr. J. McFadden, of Atlanta, Ga.; Rigid Os, by Dr. D. Mayer, of Charleston, West Va.; and Some Recent Work in Gall-bladder Surgery, by Dr. Edwin Ricketts, of Cincinnati. Dr. Joseph Price, of Philadelphia, will also read a paper. The subject for general discussion will be The General Practitioner—His Duty to the Profession, to Himself, and to Society.

An International Sanitary Congress.—The following circular, which is addressed to the medical profession, has been sent by Dr. B. Joy Jeffries, of Boston, for publication: The measures taken in different countries to guarantee the responsibility of employees, also to insure the hygienic interests of those traveling by rail or by steamer, are very varied, and may be considered insufficient in some respects. For this reason it has seemed important to establish an international congress composed of members of the medical profession who will interest themselves in the sanitary questions with regard to traveling by rail or by steamer.

The organization committee has thought it best to divide the proceedings of the congress into three sections: 1. The guarantee of the efficiency of employees. 2. The organization of the medical service. 3. The hygienic interests of travelers and of the employees.

The committee has prepared a short and concise report of what has been done up to the present time in Holland in regard to these questions, and it is hoped that similar reports will be presented at the congress by representatives of the railway and steamship companies of other countries, in order that a comparative study of the measures taken by them may be made.

In view of the international importance of the various questions to be discussed at the congress, the committee requests the directors and managers of the various railway and steamship companies to send delegates to the congress, and to communicate to the secretary-general their names and rank before September 1, 1895.

The delegates from each country are requested to make themselves fully acquainted with the subject in question, in order that they may present as complete a report as possible of the measures taken by the different railway and steamship companies.

They are further requested to communicate the titles of their papers to the secretary-general before September 1, 1895.

All members desiring to take part in the congress will communicate as soon as possible with the secretary-general, M. le Dr. M. W. Pijnappel, Stadhouderskade 60, Amsterdam, and send their papers and their present addresses.

The congress will be held in Amsterdam, on September 20 and 21, 1895. The fee of admission will be five florins. The communications may be made in French, English, or German.

A completed programme will be sent to each member, also a short account of the present condition of these questions in the Netherlands.

Acute Polyarticular Rheumatism following a Serum Injection.—At a recent meeting of the *Société médicale des hôpitaux*, a report of which is published in the *Journal de clinique et de thérapeutique infantiles* for July 25th, M. L. Gaillard related the case of a woman, thirty-three years old, who suffered with an angina which seemed slight in the beginning, but suddenly became aggravated to such a degree that, five days after the onset, the author gave the patient an injection of forty cubic centimetres of Roux's serum. There was no febrile reaction, there was no erythema, and there were no symptoms that could be directly attributed to the employment of the serum. On the evening following the injection the temperature was 103° F. On the 14th of June, three days later, the fever had diminished and there was a very marked amelioration both in the general and in the local condition. The patient felt so well that she left the hospital on the 16th. A bacteriological examination was made after the injection, but Loeffler's bacillus was not found, only staphylococci and streptococci.

On the 27th of June the patient returned to the hospital suffering with a morbillous and papular erythema on the body and on the limbs and with sharp articular pains. On the following day M. Gaillard found a serious polyarticular rheumatism involving the shoulders, the elbows, the wrists, all the articulations of the lower limbs, including the hips, especially on the right side, and the temporo-maxillary and sterno-clavicular joints. The patient's temperature was 101·6° in the morning and 103·5° in the evening. There were no cardiac complications, and nothing was found in the urine. A hundred and eighty grains of sodium salicylate were given in two doses, and by the 30th the fever had disappeared and the articulations had almost recovered their normal condition. A third dose of ninety grains was then given and a complete recovery resulted. The use of the medicine was then stopped. A few days later the patient felt a slight pain in the left sacro-iliac articulation, but nothing further occurred, and she left the hospital on the 12th of July fully cured.

This patient, said M. Gaillard, had never had rheumatism before, and her parents were not rheumatic. She had occasionally suffered with a doubtful elytritis, but there had been no appearance of blennorrhagic rheumatism. M. Gaillard concluded that the articular and cutaneous symptoms observed might be attributed to the action of the serum.

The Prophylaxis of Alcoholism.—At a recent meeting of the *Académie de médecine*, a report of which is published in the *France médicale* for July 26th, M. Laborde referred to a former communication in which he had tried to show that the rectification of all alcohols, and particularly the alcohol of commerce, constituted the necessary and fundamental solution of the hygienic problem in regard to alcoholism. One of the most dangerous impurities of alcohol, he said, was pyromucic aldehyde or furfurol. It was especially with regard to its manufacture, which had almost completely taken the place of the natural production, that it was important to require and to make obligatory the rectification of alcohol, because it was by the employment of the most impure alcohols that the trade naturally benefited.

Experience had proved, said M. Laborde, that an alcohol of a superior type chemically and atomically, such as amylic, propylic, or butylic alcohol, was essentially of a superior toxicity to that of the alcohol of the ethylic type. The alcohol distilled from wine or from the wort of grapes was less toxic than the alcohols of grains, beet-root, etc. During the period when natural wine and alcohol had been drank, only the drunkenness of exhilaration had been observed, scarcely exceeding the limits of joviality. The drunkard of to-day presented stupefying intoxication and death. There was also the impulsive drunkenness of this particular alcoholic intoxication which led to the most horrible crimes. The same thing was true, also, of the influence of artificial bouquets. M. Girard, said the author, had proved that the bouquet of "cognac" was a dangerous poison.

The question of alcoholism among soldiers was also a very important one. The distribution of alcohol in the army and in the navy was regulated by law, but M. Laborde thought that the quality of the product was not sufficiently taken into consideration by those who were appointed to attend to its distribution, and the soldiers were thus exposed to the risk of consuming a very inferior quality of brandy.

The convulsivant power of absinthe was well known. Its action might be compared to that of an aldehyde which played an important part in the manufacture of bitters, etc., salicylic aldehyde. The action of this drug was an essentially epileptic one, and, when the dose was sufficient, caused rapid death.

Among the other essences and bouquets, said M. Laborde, one of the most dangerous, owing to its terrible tetanic action, was the essence of noyau. Other poisons were the bouquets called *huiles de vin* employed in the artificial manufacture of wine. These products were of a very marked toxicity, and gave rise to symptoms of collapse and asphyxia after a short period of excitation. Compared to the French product, the German product was at least ten times as active and toxic, and it was given the preference in commerce because it gave the same results in the manufacture of wines with the least expense.

With regard to the remedy against this abuse, said M. Laborde, it was fundamentally the rectification of alcohols, to restore them to a type less toxic and less harmful. Then the prohibition of the various bouquets and essences which constituted the essential agents of the toxicity of the alcohol or of alcoholic drinks. Finally, there were the various moral or public repressive measures, which were of a nature to help toward the results which it was incumbent upon us to endeavor to obtain.

The Canadian Medical Association.—The twenty-eighth annual meeting will be held in Kingston on August 28th, 29th, and 30th, under the presidency of Dr. William Bayard, of St. John, N. B. The programme includes the following papers: The President's Address, by Dr. William Bayard; An Address in Surgery, by Dr. I. H. Cameron, of Toronto; An Address in Medicine, by Dr. Edward Farrell, of Halifax; Physical Training and Development as a Therapeutic Measure, by Dr. B. E. McKenzie, of Toronto; What is the Best Treatment for Retroversion of the Uterus? by Dr. A. Lapthorn Smith, of Montreal; A Tumor of the Medulla Oblongata, by Dr. J. E. Graham, of Toronto; A Report of a Case of Acromegaly, by Dr. F. Buller, of Montreal; Notes upon Typhoid Fever in Private Practice, by Dr. W. S. Muir, of Truro, N. S.; Objective Noises in the Head, by Dr. G. Sterling Ryerson, of Toronto; Some Practical Notes on Mental Depression, by Dr. J. V. Anglin, of Montreal; The Operative Treatment of Injuries of the Head, by Dr. A. J. McCosh, of New York (to be discussed by Dr. James Bell, of Montreal, and Dr. George A. Peters, of Toronto); The Final Results of Gastro-enterostomy, by Dr. Robert C. Kirkpatrick, of Montreal; Dysmenorrhœa, with the Report of a Case, by Dr. J. Campbell, of Seaforth; The Importance of Early Treatment in Cutaneous Cancers, by Dr. A. R. Robinson, of New York; The Anomalies of Albuminuria, by Dr. J. R. Hamilton, of Port Dover; Double Orchidectomy in Enlarged Prostate, by Dr. E. E. King, of Toronto; Experimental Cachexia Strumipriva, by Dr. Wesley Mills, of Montreal; Notes on some of the Newer Remedies used in Diseases of the Skin, by Dr. L. Duncan Bulkley, of New York; Acute Uræmia followed by Gangrenous Abscess of the Lung, by Dr. A. McPhedran, of Toronto; A Report of a Case of Spina Bifida, with Treatment, by Dr. J. L. Bray, of Chatham; Thyreoid Feeding in Cases of Stupor, by Dr. C. K. Clark, of Kingston; Syphilitic Manifestations in the Eye, by Dr. Alfred J. Horsey, of Ottawa; The Ophthalmometer, by Dr. R. A. Reeve, of Toronto; Notes on a Case of Brain Tumor, with an Account of its Removal, by Dr. J. Webster, of Kingston; A Case of Placenta with Hydatids—Fœtus with Spina Bifida, by Dr. Alexander Bethune, of Seaforth; The Relation of Insanity to General Diseases, by Dr. E. H. Stafford, of Toronto; Notes on a Case of Hernia of the Vermiform Appendix, by Dr. R. W. Garrett, of Kingston; Some Unusual Forms of Hernia, by Dr. F. J. Shepherd, of Montreal; Cases in Practice, by Dr. W. G. Anglin, of Kingston; The Operative Treatment in Movable Kidney, by Dr. James Bell, of Montreal; and Asthma, by Dr. H. J. Saunders, of Kingston. Papers will be read also by Dr. T. G. Roddick, of Montreal, Dr. J. L. Currie, of Cambridge, Mass., and Dr. W. W. White, of St. John, N. B. A skin clinic will be held in which Dr. J. E. Graham, of Toronto, Dr. F. J. Shepherd, of Montreal, and Dr. L. Duncan Bulkley, of New York, will take part.

The New Jersey State Board of Medical Examiners.—Officers of the board have been elected as follows: President, Dr. Edwin De Baun, of Passaic; secretary, Dr. William Perry Watson, of Jersey City; treasurer, Dr. A. H. Worthington, of Trenton.

Original Communications.

OPERATIVE SURGERY IN THE SERVICE OF WILLIAM T. BULL, M. D., AT THE NEW YORK HOSPITAL,

From July 1, 1890, to January 1, 1895.

By E. M. FOOTE, M. D.,
LATE HOUSE SURGEON.

Every surgeon who is placed in a position to see and to operate upon large numbers of patients ought to record his experience for the benefit of the profession.

From the six hundred and twelve cases which form the basis of this report, certain ones have been selected for a more detailed description: not those which reflect the most glory upon the operator—if anything rather the opposite; for the principle has been to choose those which were most instructive; and the most instructive cases are often the cases where surgical measures are unsuccessful. "One hundred ovariotomies without a death" is an encouraging title; but it does not advance our knowledge of surgical pathology very far; and an analysis of a single death from hæmorrhage or peritonitis may be of real service. The following table shows the operations performed and the deaths, about 7·5 per cent.:

	Operations.	Deaths.
For appendicitis	22	4
For hernia	119	4
Upon the stomach	6	5
" " liver and gall bladder	9	3
" " intestines	8	1
Abdominal (exploratory)	25	8
On the pelvic organs	41	10
Total upon the abdomen	230	35
Upon the head and neck	93	5
" " trunk	87	4
" " extremities	97	
" " genito-urinary tract	83	2
" " rectum	22	
	612	46

Of these operations forty-five were for tuberculosis, twenty-one for benign, and sixty-four for malignant neoplasms.

The technique of aseptic surgery, and more particularly of abdominal surgery, has been so thoroughly discussed, that it need only be referred to here in order to say that every precaution was taken to make use of each new discovery. How difficult it is to secure perfect asepsis in a general hospital where operator, assistants, instruments, and operating room must be constantly employed upon septic as well as clean cases, is illustrated by the fact that occasionally suppuration followed an operation where it was least to be expected.

As a matter of convenience the cases in this report have been arranged under the following heads:

Appendicitis.
Hernia.
Surgery of the abdomen, including stomach, liver, and gall bladder, intestines, and peritonæum.
Surgery of the pelvic organs.
Surgery of the genito-urinary system.
Malignant new growths.
Unclassified operations.

APPENDICITIS.

The period covered by this report, 1890–'95, is one in which great advance has been made in the diagnosis and treatment of appendicitis. Increasing pathological data are gradually leading to a more rational classification of the various sorts of appendical trouble than any which has so far been offered. In this view the following twenty-two cases, reaching back nearly five years, afford an interesting study. It will be readily seen that almost all of them may be placed in one of two general classes.

One of these classes comprises those cases in which a purulent inflammation with or without perforation of the appendix has led to the formation of an abscess shut off by adhesions from the general peritoneal cavity. The condition of the appendix—necrotic, perforated, buried in adhesions, etc.—is of secondary importance. The essential feature of such a case is the presence of an abdominal abscess, and treatment must be directed to its relief.

The other class includes those cases which are perhaps best described by the term *chronic relapsing appendicitis*—*i. e.*, the inflammation is a chronic one with recurring periods of acute exacerbation.

(1) *Acute Appendicitis with Abscess.*—Reference to the tables which follow will show that the first nine cases described are very similar. In such case the diagnosis is easily made. There is a sharp attack of pain in the region of the appendix, with a chill followed by fever, vomiting, and constipation yielding to cathartics. There may be a history of a similar previous attack. This group of symptoms is in itself sufficiently clear, and in addition there is almost always evidence of beginning suppuration in the tenderness, dullness on percussion, and swelling in the neighborhood of the appendix. In eight of the nine cases here recorded an operation was performed on the fourth day or later, so that the physical signs of an abscess in an abdomen elsewhere normal or slightly tympanitic, were very well marked. Cases V, VIII, and IX were seen on the tenth, fourteenth, and twelfth days of the disease, and the quantity of pus which was present was very large.

In no acute case with abscess ought the rectal examination to be omitted. As the pus accumulates it shows a tendency to work down into the pelvis; and if adhesions form or if adhesions which have been broken down to allow the escape of pus reform, we may have abscess in the recto-vesical space, entirely separated from the one about the appendix. This was the exact condition of things in Case VIII, and had not the rectal examination previously made called attention to its existence, this secondary abscess might well have been entirely neglected. In Case XVII such an abscess formed after the operation, and one can not avoid the impression that had it been discovered sooner the issue in that case would have been different. As it was, an abscess which formed at the stump of the appendix was drained on the sixth day after operation, and gave temporary relief. On the eleventh day the prorectal abscess was drained through the wound and ten ounces of pus escaped, but sepsis was then so well established that the patient succumbed.

The operations were performed in accordance with the recognized principles of abdominal surgery. In most cases the incision was slightly oblique, from above downward and inward, along the border of the rectus abdominalis muscle. It was as short as might be and as long as must be. If the peritoneal cavity was opened it was protected with sponges, while the abscess cavity was drained and sponged dry. In the earlier cases this was done with a solution of bichloride of mercury (1 to 5,000); in the latter cases with hot water. In the cases in which the abscess cavity could be thoroughly cleansed the appendix was excised. In the cases seen late, where the cavity was a large one and the appendix thoroughly surrounded by inflammatory products, it was considered wiser to leave it than to increase the risk of operation by tearing it up and excising it. This occurred in three cases; in four the appendix was excised; in two it was necrotic and floating in the pus. If the appendix was removed the stump was inverted and the serous coat of the cæcum closed over it by Lembert stitches.

In some of the earlier cases drainage with rubber tubing was employed. In the later cases that was abandoned and iodoform gauze alone employed; or, if the abscess cavity was very deep, a glass tube with strips of gauze was carried to the bottom of it. A glass rod would have done as well. Its function was to keep a straight channel open for the gauze. Such portion of the wound as was not occupied by the gauze was sutured usually in one layer.

The after-treatment consisted in the avoidance of morphine as much as possible; the removal of the stiff drains in less than forty-eight hours and of the gauze on the fourth day, or as soon as it had loosened sufficiently to allow of its extraction without tearing up the adhesions which quickly form around it; and the early evacuation of the bowels (third or fourth day) by calomel and a saline.

The wearing of a belt for a year was advised in all cases, acute and chronic, but this advice was very imperfectly followed. However, in the twelve cases which I succeeded in following only two show a tendency to distention of the scar, and in both of these it is insignificant. The time since operation in these cases varies from one to four years.

(2) *Chronic Relapsing Appendicitis.*—This form of appendicitis is illustrated by Cases XI to XXII. The characteristics are recurring attacks of abdominal pain referred to the region of the appendix and accompanied by more or less constitutional disturbance. The histories of the cases cited show that while at first the intervals between the attack may be described as normal, that in the progress of the disease the intervals grow shorter and less free from pain. So that it is not always possible to say whether an operation is done in the interval or during an attack.

Pathologically, there is a chronically inflamed appendix, thicker and stiffer than normal and more or less adherent. Such an appendix is almost always palpable, even without an anæsthetic.

In the cases here recorded the number of previous attacks varies from one to eight and the time covered from four months to four years. Naturally in many of the cases there was an absence of fever.

In these cases the operation differs from that in the cases where an abscess exists in two important particulars. The cause of the trouble being the chronically inflamed appendix, this organ, no matter where situated, must be excised in order to insure success. If there was no suspicion of purulent inflammation the abdomen was closed without drainage. This was done in nine of the twelve cases recorded, whereas in all the acute cases drainage was used.

It is an interesting fact to note that the severity of the symptoms is not directly dependent upon the amount of adhesion nor upon the distortion of the appendix, and that the relief obtained by removal of the offending member may be as great when there is no adhesion and only a slight amount of inflammatory thickening of the appendix itself as when the organ is kinked up and glued to all of its neighbors. Cases XIII and XIV are almost identical in this respect. In each the patient was a stout woman of about fifty years, whose life for months had been made miserable by constantly recurring attacks of pain in the region of the appendix. The adhesions were absent in one case, in the other slight, and both appendices, with their glistening peritoneal covering, seemed to justify the newspaper cry about the needless removal of this little organ; but the microscope in both cases established the diagnosis, made from the previous history, of chronic catarrhal appendicitis, and the subsequent history in both cases amply justifies the wisdom of removal. One patient writes nearly three years after operation: "My lifelong enemy, constipation, seems conquered. I am, in fact, like a new being—quite made over; and in view of the fact that I was fifty years of age at the time of the operation, had suffered intensely and almost continuously for a period of over two years, was absent from my home only three weeks (to a day) for treatment and operation, and am now wholly and entirely restored to health, is a marvel which my family and friends continue to talk about to this day."

In these twenty-two cases four died. The first of these (Case VII) is typical of the swift death from dry septic peritonitis, if it may be called peritonitis, which may follow any abdominal operation. The ordinary signs of peritonitis are not well marked; the temperature remains nearly normal until just before death, when it rapidly rises. The pulse-rate, on the other hand, is a much surer index of the bad condition, and there is increasing nervousness and then delirium. Note the history: F. McN., aged twelve years,

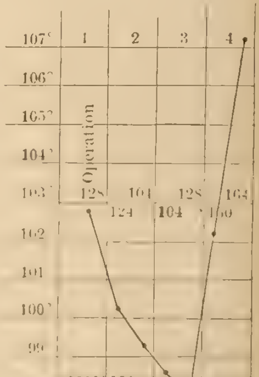

Chart 1, Case VII.

male, came to operation on the fourth day with a temperature of 102·6° and a pulse of 128. The general condition was fair. A laxative given the day before was effectual. The operation was not difficult. The appendix was perforated and contained a small fæcal concretion. It lay in a small abscess cavity covered in front by omentum, which was adherent to the parietal peritonæum. The general abdominal cavity was therefore not opened. The appendix was excised, and the pus cavity swabbed with bichloride and drained with gauze. The patient rallied well. On the following day he vomited and was very restless. On the second day he was wildly delirious, but without much tympanites, and on the third day was dead. The appended chart shows the pulse and temperature record.

The next death (Case X) was one from well-marked general peritonitis. The patient was practically dead when brought into the hospital, and the shock of the operation, which lasted only a few minutes, could scarcely have hastened his exitus.

The fatality in Case XVII was due to extensive local suppuration, particularly in the pelvis. The patient, a male, aged twenty-six years, on entrance was in good condition. He gave a history of eight attacks—the last one being "*two months ago.*" Nevertheless, the appendix was perforated near its tip, the perforation containing a drop of mucus but no visible pus, and it was thought safe to close the abdomen. Experience has proved this was taking an unwarrantable risk. The symptoms were directly the opposite of those in the first death recorded—viz., tympanites, hiccough, and vomiting, some fever, and a strong and not very rapid pulse. On the fifth day the record showed temperature, 101·4°; and pulse, 116. The bowels were moved by repeated doses of calomel and salines. The sixth day a mural abscess was evacuated. It extended apparently to the stump of the appendix. There was temporary relief of the septic symptoms, and then these increased until, on the eleventh day, a large abscess in front of the rectum broke into the wound and about ten ounces of pus were evacuated; but too late, for death occurred two days later.

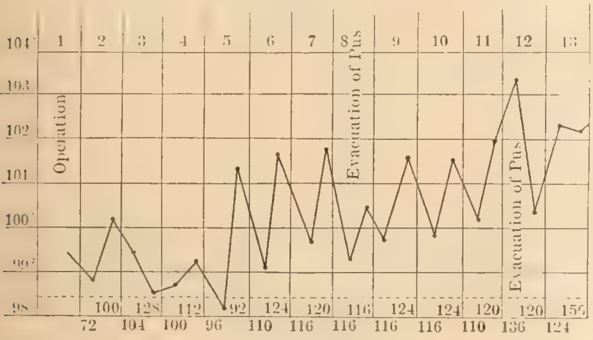

Chart 2, Case XVII.

The fourth death must be attributed to the operation *per se.* A small sponge placed outside of the cæcum was left in the abdominal cavity, and gave rise to a general suppurative peritonitis. Of course a sterile sponge in an aseptic abdominal cavity could hardly produce such a complication, but in this case the chain of asepsis must have been broken in some link. The appendix was not perforated nor very acutely inflamed, but cultures made from its peritoneal surface immediately upon removal yielded several pure colonies of *Staphylococcus pyogenes albus*, and it is only reasonable to suppose that they were introduced from without, as no growth could be obtained from its mucous surface, and a culture made from the muscular wall had a solitary colony, perhaps from a germ carried in from the serosa by the knife blade used to slice off the serous coat.

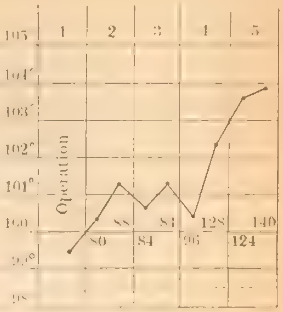

Chart 3.

The comparison of these three charts is instructive. Chart 1, a case of quick death after laparotomy—a peritoneal sepsis; Chart 2, a suppurative peritonitis with absorption of the poisonous products for many days; Chart 3, also a suppurative peritonitis, but a more rapid one, due to the staphylococcus in the presence of a constant source of irritation—a foreign body—peritonitis.

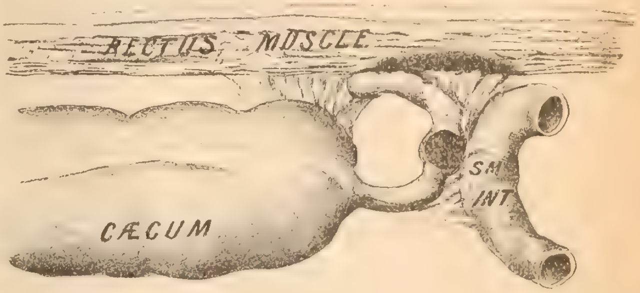

Fig. 1.—Diagram of Case XVIII. The appendix contains a concretion and is adherent to the small intestine and to the abdominal wall. From its tip an abscess extends within the sheath of the rectus muscle one and a half inches.

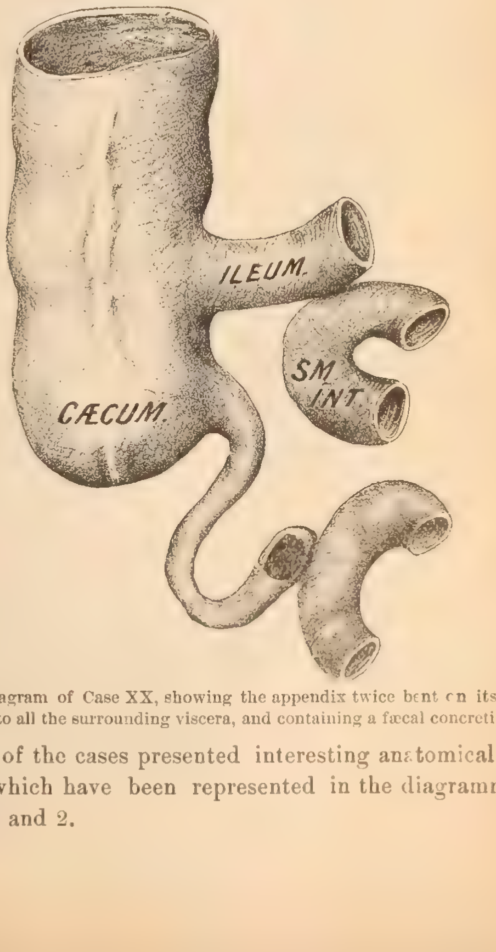

Fig. 2.—Diagram of Case XX, showing the appendix twice bent on itself, adherent to all the surrounding viscera, and containing a fæcal concretion.

Two of the cases presented interesting anatomical conditions which have been represented in the diagrammatic figures 1 and 2.

OPERATIONS FOR APPENDICITIS.

Number.	Name, age, sex, date of operation.	Previous history.	Physical examination.	Operation.	After-treatment.	Pathology and remarks.	Subsequent history.
1	W. F. H.; 25 years; male; Jan. 8, 1891.	First attack; 4 days, pain in back and right side; 3 days, localized pain; 1 day, fæcal vomiting; no obstipation.	Condition good. T., 100·5°; P., 100. Tympanites. No tumefaction even under ether. Rectal examination negative.	Ether; 4-in. incision over border of right rectus. Congested omentum and coils of small intestine are separated. Appendix is perforated and has 4 drachms of pus beside it. Cavity well shut off from general abdomen. Appendix excised, and pus cavity swabbed with 1 to 5,000 bichloride. Iodoform gauze drain and suture elsewhere.	Reacted well; dejection 4th day after saline; gauze out on 6th day. Primary union except at drain site. Up in 21 days.	Acute inflammation of appendix with hæmorrhages, and necrosis of mucous membrane.	Not traced.
2	T. McG.; 21 years; male; Feb. 28, 1891.	Previous attacks, 7 and 3 years ago; 4 days, vomiting, fever, obstipation, and local pain.	Condition good. T., 101°; P., 96. Abdomen retracted; local erythema, resistance, and tenderness; tumefaction only under ether.	Ether; 2-in. incision parallel to Poupart's ligament opens abscess cavity. Abdomen well shut off by adhesions. Abscess cavity contained 1 oz. of offensive pus, the perforated appendix, and a bit of omentum. Both were excised, and pus cavity swabbed with 1 to 5,000 bichloride. Gauze drain and suture.	Reacted well; dejection 5th day after saline; gauze out on 9th day. Primary union except at drain site. Discharge fæcal for a few days. Sinus closed in 30 days; afterward reopened, but healed spontaneously.	Appendix congested, with false membrane in proximal half, and a perforation.	No hernia; no recurrence of inflammation. Died in 1894 of pulmonary tuberculosis.
3	M. S.; 16 years; male; Mar. 15, 1891.	First attack; 3 days, local pain, fever, vomiting, obstipation.	Prostration. T., 102·2°; P., 90. Abdomen not distended. Tumor 4 in. by 2 in., its long axis parallel to and 2 in. removed from Poupart's ligament.	Chloroform; 2½-in. incision in long axis of tumor. Abscess cavity well shut off from abdomen. Appendix adherent in the wall of this cavity; is perforated in three places; excised. Abdominal cavity accidentally opened. Abscess cavity swabbed with 1 to 5,000 bichloride. Gauze drain and suture.	Reacted well; dejection 3d day after salines and enemata.	Acute inflammation of appendix with perforation; microscopic hæmorrhages and abscesses.	Not traced.
4	W. B. W.; 30 years; male; Aug. 29, 1891.	Previous attacks: 2 years ago, with constipation and non-localized pain, lasting 1 mo.; 20 mos. ago, attack lasting 2 days; 16 mos. ago, a third attack, 1 day; 6 mos. ago, a fourth attack, 2 days; 14 days, localized pain; 4 days, nausea, vomiting, obstipation.	Condition fair. T., 101°; P., 90. Well-marked, tender, dull tumor.	Chloroform; 2-in. oblique incision enters general peritoneal cavity, which is protected by sponges while the underlying abscess is opened; 3 oz. of pus and the perforated and gangrenous appendix flow out. Swabbed with 1 to 5,000 bichloride. Gauze and rubber drains; upper part of wound sutured.	Reacted well; dejection 3d day after salines; tube out 9th day; up on 11th day.	....	Feb. 11, 1895: perfectly well. Scar, 1¾ in. No tendency to rupture. Never wore a bandage. No recurrence of pain.
5	H. B.; 27 years; male; Sept. 30, 1892.	Three years ago a perityphlitic abscess was drained; appendix not removed; 10 days constant local pain and diarrhœa.	Condition fair. T., 101·6°; P., 104. Local tenderness and ill-defined mass.	Ether; 4-in. incision opens an abscess cavity; completely walled off from the peritoneal cavity, and containing 1 qt. of pus. Appendix firmly adherent in posterior wall of abscess. No attempt at removal; irrigation with boiled water. Counter-opening in loin. Gauze and rubber drains.	Reacted well. Dressed 4th day; discharge large. Irrigated daily with boiled water; 12th day, tubes out; 17th day, discharged with a small sinus.	....	Not traced.
6	S. W.; 16 years; female; Sept. 30, 1892.	First attack; 9 days, vomiting, fever, local pain; dejection after laxative.	Condition fair. T., 102·2°; P., 128. Tenderness and induration in right side of abdomen, felt also rectally. Maximum point of tenderness nearly as high up as costal margin.	Chloroform; 4-in. incision opens an abscess cavity extending behind the cæcum and ascending colon as high as the hepatic flexure, and containing 2 or 3 ounces of pus. No perforation detected; swabbed with hot water. Gauze and rubber tubes.	Reacted well. Irrigated 2d day. Fæcal discharge for a week, then until leaving the hospital, 5 weeks later, a gradually diminishing purulent, odorless discharge. Went home with 1½-in. sinus.	....	Wore a belt 9 mos. No recurrent attacks, but some pain in wound on overexertion. No rupture, and general health excellent, Feb. 11, 1895.

Number.	Name, age, sex, date of operation.	Previous history.	Physical examination.	Operation.	After-treatment.	Pathology and remarks.	Subsequent history.
7	F. McN.; 12 years; male; Nov. 3, 1892.	First attack; onset sudden; 4 days, vomiting and localized pain; 2 days, vomiting has ceased. Dejection after laxative.	Condition fair. T., 102·6°; P., 128. Abdomen slightly tympanitic; large tender mass in right iliac fossa, flat on percussion; rectal examination negative.	Chloroform; 2½-in. incision. Peritonæum thickened and adherent to omentum, which completely covers the appendix. The latter is coiled up and perforated 1½ in. from its origin. It lies in a small abscess cavity, which contains, besides pus, a fæcal concretion. Appendix excised; cavity swabbed with bichloride and drained with iodoform gauze.	Reacted well; 1st day vomited twice; 2d day, T. 99°, pulse rapid, very delirious. Wound was dressed, but no explanation of condition found. 3d day, T. 107·2°, P. 164. Death in 72 hours.	Acute hæmorrhagic and purulent appendicitis, with perforation. Autopsy refused. Examination through the wound showed a small amount of exudate about the cæcum, but no pus pockets nor general peritonitis. Urine at death contained iodine.	
8	W. H.; 16 years; male; Jan. 28, 1893.	First attack; 2 weeks, local pain and swelling; no vomiting; rectal tenesmus.	Condition fair. T., 101·8°; P., 120. Tense, painful tumor occupying right iliac fossa and extending beyond median line; fluctuation. Rectal examination shows a hard mass on the right side.	Chloroform. Incision along border of rectus opens an abscess cavity extending from Poupart's ligament to above umbilicus and beyond median line. A second abscess in front of the rectum. The two do not communicate, and both were well shut off from the general peritoneal cavity. Appendix not seen. Cavities evacuated and sponged with hot water. Glass tube and iodoform gauze in the deep cavity; gauze alone in the upper one.	Reacted well. Recovery uneventful, except pocketing of pus caused a temporary fever. On 21st day a fæcal fistula formed and persisted.	. . . .	The fistula continued to discharge fæcal matter; health otherwise good. May 11, 1895, the fistula was dissected out and a perforation in the small intestine was sutured. Complete recovery. Not traced since.
9	G. V.; 22 years; male; April 20, 1894.	First attack; 12 days, local pain and swelling, with constipation.	Condition fair. T., 100·8°; P., 88. Large fluctuating tumor, reaching to costal margin. Rectal examination negative.	Ether; 3-in. incision over border of rectus opens peritoneal cavity, and then a large abscess cavity, in the purulent contents of which the gangrenous appendix is floating. Irrigation with boiled water, and large gauze drain.	Reacted well. Recovery uneventful. Left the hospital in 7 weeks with a small sinus.	. . . .	Has worn a woolen bandage in cold weather. No rupture nor recurrence of pain. Sinus closed soon after leaving hospital. In excellent health, Feb. 13, 1895.
10	T. F.; 19 years; male; Aug. 2, 1891.	Previous attack 1 year ago; 11 days, localized pain; 5 days, nausea and vomiting and excessive weakness.	Prostration. T., 101·4°; P., 96. Great tympanites except in right iliac region; local dullness and tenderness.	Chloroform; 3-in. oblique incision. Cæcum adherent to abdominal parietes. Its inner and posterior surfaces form part of the wall of a gangrenous cavity, containing 4 drachms of pus. Appendix not seen. Cavity swabbed with 1 to 5,000 bichloride. Gauze and rubber drain; upper part of wound sutured.	Gradual failure in spite of stimulation, and death in 8 hours.		
11	H. W.; 25 years; male; Mar. 19, 1892.	Previous attack 1 year ago; 5 days, local pain; no vomiting, no constipation.	Condition good. T., 102·6°; P., 112. Moderate tympanites; slightly dull, tender, and indurated tumefaction.	Ether; 3-in. incision along border of rectus. Cæcum and appendix surrounded by old and new adhesions. Appendix perforated, but no pus nor fæces apparent; excised, and stump closed by Lembert sutures. Gauze drain to stump; wound closed elsewhere in layers.	Reacted well; wound healed perfectly. On the 2d day developed right lobar pneumonia, and chest was badly burned by alcohol explosion in cupping; 15th day, left lobar pneumonia; wound entirely healed. May 5th, discharged cured.	Acute inflammation of appendix with ulceration of mucous membrane, and microscopic abscesses and hæmorrhages.	Not traced.
12	T. P.; 25 years; male; April 16, 1892.	Four previous attacks in last 2 years. In the second, an abscess cavity lanced; in the third and fourth, pus broke through the scar. Present attack slight.	Condition good. T., 98·6°; P., 78. No tympanites; 3-in. vertical scar over appendix; region resistant and tender.	Ether; 4-in. incision internal to scar. Appendix imbedded in cæcal adhesions; removed with difficulty. Stump and two tears in cæcum closed Lembert style; no fæces escaped. Irrigation with hot boiled water. Gauze drain; suture elsewhere.	Reacted well; 2d day, nausea and local peritonitis; 5th day, bowels moved by enema. Gauze out 8th day; sutures out: good union.	Extensive chronic inflammatory changes in appendix.	Two months after operation some bloating and pain, but no indication of pus formation. April 1, 1895: slight hernia in upper end of wound. No pain.

Number.	Name, age, sex, date of operation.	Previous history.	Physical examination.	Operation.	After-treatment.	Pathology and remarks.	Subsequent history.
13	S. S.; 55 years; female; April 19, 1892.	Four mos. several slight attacks of pain in abdomen, with slight chill and passage of blood and mucus. Has hæmorrhoids.	Condition good. T., 98·4°; P., 72. Abdomen fat; no tenderness; doubtful resistance in region of appendix.	Ether; 4-in. incision along border of rectus. Long and slightly adherent appendix excised. Small, calcified, pedicled, fibromyoma removed from uterus. The pedicle was so small and bloodless that it required no ligature. Abdomen closed by silk stitches *en masse*, with a small glass drain in the wall. Hæmorrhoids ligatured and excised.	Reacted well. Recovery uneventful except that a mural abscess of mild type developed in the upper part of the wound, and healed rapidly after evacuation of its contents.	Catarrhal appendicitis.	No recurrence of pain; no hernia.
14	A. C. S.; 50 years; female; Jan. 12, 1892.	In past 32 mos. 4 attacks of abdominal pain, fever, and vomiting, each of 1 week's duration; of constipated habit.	Condition good. T., 98·6°; P., 72. Abdomen fat; examination negative.	Ether; 4-in. incision along border of rectus. Parietal peritonæum thickened. Slight cæcal adhesions. Appendix not adherent and not swollen. Excision; no drain. Abdomen closed with silkworm gut.	Reaction good; dejection 4th day; stitches out 11th day; up on 12th day.	Catarrhal appendicitis.	Wore a support for some months. No attack of pain nor rupture. Health excellent. Constipation cured, Feb. 11, 1895
15	W. A.; 39 years; male; Oct. 7, 1892.	Five attacks of local pain, vomiting, and constipation in past 2½ years. Last and worst attack began 7 weeks ago, and continued 2 wks.	Condition excellent. T., 99·6°; P., 116. Abdomen normal, except resistance and tenderness in right iliac fossa; no distinct tumor.	Ether; 3-in. incision opens peritoneal cavity. Omentum adherent to cæcum. Appendix adherent behind the cæcum; separated and excised. Lembert suture; no drain. Wall closed in layers.	Reacted well. Dressed 7th day; primary union; up on 14th day.	Chronic catarrhal appendicitis, with microscopical subperitoneal hæmorrhages.	Wore a belt 20 mos. No recurrence of pain; no rupture. Has had out-of-door employment, and is in perfect health, Feb. 7, 1895.
16	F. L. P.; 33 years; male; Oct. 27, 1892.	Previous attacks, 17 and 5 mos. ago, with localized pain and tumor and fever, lasting about 10 days; considerable pain at other times.	Condition good. T., 99°; P., 84. Abdomen normal, except small, distinct mass in right iliac region, slightly tender.	Ether; 3-in. incision opens abdominal cavity. Peritonæum thickened and cæcum adherent. Appendix lies in a mass of adhesions behind cæcum; excised. Lembert suture; wound closed with silkworm gut; no drain.	Reacted well: dejection 4th day after calomel; primary union. T. never above 99° F. Up on 12th day.	The central portion of the appendix is markedly dilated, the lumen of this portion being twice that of the extremities. Microscopically it shows chronic inflammation, with a few hæmorrhages and some granulation tissue.	Belt worn 9 mos. Not a pain since leaving hospital. In perfect health, Feb. 8, 1895.
17	C. P.; 26 years; male; Nov. 25, 1892.	Eight attacks in 4 years, last 2 mos. ago. Pain and tenderness in the intervals.	Condition good. T., 99·2°; P., 76. Abdomen not distended; a distinct tumor in right iliac fossa, somewhat tender and not movable. Rectal examination negative.	Ether, 4-in. incision opens abdominal cavity. Appendix runs upward behind the cæcum, to which it is adherent. From a small perforation near the tip a drop of mucus exudes; no pus. Excised; Lembert suture; no irrigation. Wound closed without drainage.	Reacted well; 2d day, tympanites; 3d day, hiccough and vomiting, slight fever; 5th day, T. 101·4°, P. 116; 6th day, a small mural abscess is evacuated. Bowels moved by repeated doses of calomel, after salts and enemata had failed; 11th day, an abscess of 10 oz. in the pelvis is drained through the wound. Sepsis and peritonitis are marked; 13th day, death.	Catarrhal appendicitis with perforation. Autopsy refused. Examination through the wound failed to reveal any other abscess.	
18	H. F. S.; 20 years; male; Oct. 11, 1893.	Three attacks of local pain and swelling in past 4 mos., the last occurring 3½ weeks ago.	Condition fair. T., 99·4°; P., 92. No tympanites. Tender mass the size of the finger, 1½ in. above and parallel to outer two thirds of Poupart's ligament.	Ether; 4-in. incision along border of rectus. Appendix, bent on itself, lies in front of cæcum, being adherent by its tip to the abdominal wall. Adhesions also exist between the cæcum and abdominal wall, and just below the appendix a knuckle of small intestine is firmly adherent to both the appendix and abdominal wall. The appendix contained a fæcal concretion in its middle, and from its adherent tip an abscess extends 1½ in. into the rectus muscle. Appendix excised; abscess cavity scraped and packed with gauze; sutured elsewhere.	Reacted well. Gauze changed 2d day; from the 4th day a normal temperature; complete healing in 5 weeks.	Appendix shows slight inflammatory changes and atrophy of the follicles of Lieberkühn in the central dilated portion where was the concretion.	Wore a belt 9 mos. Has done much lifting as a butcher. Scar is now ½ in. wide, and muscles on its outer side show a slight bulging. Feb. 10, 1895.

Number.	Name, age, sex, date of operation.	Previous history.	Physical examination.	Operation.	After-treatment.	Pathology and remarks.	Subsequent history
19	A. K.; 21 years; male; Feb. 14, 1894.	Three attacks in past 3 years of vomiting, constipation, local pain, and swelling.	Condition good. T., 98·4°; P., 84. Abdominal and rectal examination negative, except that under ether the slightly thickened appendix is felt.	Ether; 2-in. incision along border of rectus opens abdominal cavity; omentum adherent to parietes and cæcum. Appendix runs upward in a mass of adhesions posterior to cæcum; excised; Lembert suture; gauze to stump; wall sutured elsewhere.	Forty-eight hours local pain and some abdominal rigidity, hiccough, and bilious vomiting. Dressed 8th day, primary union.	Mucous membrane of appendix thickened. Slight catarrhal inflammation with proliferation of the solitary follicles.	Wore a muslin bandage 6 mos. No recurrence of pain. Scar is sensitive in bad weather; no rupture. Health excellent, Feb. 11, 1895.
20	H. G.; 24 years; female; Mar. 15, 1894.	Six attacks in past 3 years, with local pain, chill, and fever; last attack 6 weeks ago; chronic constipation.	Condition excellent. T., 99°; P., 88. Appendix palpable, but not much enlarged; abdomen otherwise normal.	Ether; 3-in. incision along border of rectus opens abdominal cavity. Appendix below and on inner side of cæcum, sharply kinked on itself and reaching into pelvis, is adherent only at its tip; excised; Lembert suture. Wound closed without drainage.	Reacted well. Bowels moved on 5th day by calomel and enema. Primary union. Recovery without note, except that nausea and constipation were annoying.	Appendix contained a small fæcal concretion at its tip. Chronic catarrhal appendicitis.	No recurrence nor rupture. Perfect health, January, 1895.
21	A. C. S.; 29 years; male; Mar. 15, 1894.	Five slight attacks in 2 years; 1 day ago sharp local pain, chill, and slight fever.	Condition good. T., 99°; P., 76. No tympanites. Slight local induration and rigidity with tenderness.	Chloroform; 3-in. incision along border of rectus. Appendix is external to and behind cæcum, bent sharply on itself; slight old adhesions; excised; Lembert suture. Wound closed without drainage.	Reacted well; 1st day, hiccough and tympanites, T., 102°; 3d day, after enema, T. 104°, and great pain; 4th day, death from septic peritonitis.	Catarrhal inflammation, the round cells extending through all the layers to the peritonæum. Cultures made from the peritoneal surface of the appendix immediately upon removal showed pure growths of *Staphylococcus pyogenes albus*. Acute suppurative, general peritonitis.	
22	H. E. D.; 42 years; female; Nov. 20, 1894.	Six years, pain in right nephritic region; 3 years, pain and tenderness in region of appendix. No typical attacks.	Condition good. T., 98·6°; P., 80. Right kidney movable; appendix palpable.	Ether; 3-in. incision over border of rectus opens abdomen. Appendix slightly thickened, not adherent, and contains several seeds; excised; Lembert suture. Wound closed without drainage.	Reacted well. Primary union.	....	Less pain after the operation, but still so much that nephorrhaphy was performed 5 wks. after the appendectomy. In excellent health since.

(To be continued.)

DR. McCOURT'S
PROPOSITION TO THE ACADEMY OF MEDICINE TO GIVE US A NEW MEDICAL LEXICOLOGY.

By ACHILLES ROSE, M.D.

In looking over Dr. P. J. McCourt's paper, entitled Medical Terminology—its Etymology and Errors, which appeared in the issue of the *Medical Record* for July 27, 1895, it seems to me, as it seemed while listening to the lecture in the Academy of Medicine on June 6, 1895, as if the author had given us more of his own errors than he had pointed out in our nomenclature. In fact, he proposes his errors, and wishes to introduce them in places where the existing names are quite correct. In his zeal he goes so far as to suggest changes in the Greek grammar, changes of sacred rules which have stood the test of thousands of years. While he condemns in strong terms the use of hybrid words, he nevertheless recommends barbarisms, as, for instance, the words "cerebritis" and "pulmonitis." I shall confine myself to the enumeration of only a few of his blunders.

To begin with, the title of the paper has a hybrid word, as he acknowledges himself—namely, "terminology." The good Greek word "lexicology" would have been in place, the word etymology following right after it.

He mentions the misnaming of "Hippocrates," meaning "horse-tamer." I have a friend, a colleague in Athens, who, like Hippocrates, is misnamed, his name being "Ράπτης." This would not be so bad, but the etymology of Dr. McCourt, "hippos" "chrateo," is certainly most deplorable in a country of democrats.

Dr. McCourt wishes the word "calvities" substituted for "alopecia." It is true, calvities means baldness, but it does not signify pathological baldness. A new-born child has calvities, but not alopecia, for instance. Alopecia, as we all know, means "mange," as it is found in foxes and their relatives, the dogs—corresponding exactly with our pathological baldness of parasitic or atrophic origin.

"Anasarca," "ascites," and "œdema," says the author, "are all equally childish." I beg to differ very much. The original names are ὕδωρ ἀνὰ σάρκα and ὕδρωψ ἀσκίτης; what better names could be given? The correct words exist and should be employed. What better word could be found for swelling, pure and simple, than the word œdema?

The author condemns the word "atheroma"—in German, *Grützbeutel:* what better name can we wish than this, which gives the exact description of a pathological formation as it presents itself to the eye? "Atresia," which, like "artery," is condemned by Dr. McCourt, seems to me as simple and as perfect a designation as we can think of. "Chlorosis"—in German, *Bleichsucht*—also condemned by Dr. McCourt, is, I think, good enough. *Χλωρός* means green, it is true, but it means also pale. Even in our language the word "green" has different meanings, very much to the dislike of immigrants. The worst of all is, perhaps, what the author has to say about gynæcology. O doctore, si tacuisses . . . ! *Γυνή, γυναικός*, and, notwithstanding this *γενική*, you will have it gynec*a*logy? The author speaks of asthenia as if it meant weakness; this is not Dr. McCourt's, but it is a most common error among those who are not acquainted with living Greek. *Ἀσθενεία* means sickness. For weakness the Greeks have other words—for instance, *ἀδυναμία, ἀτονία. Ἀσθενεία* comes near our word "infirmity." In a footnote of Dr. McCourt's paper we find an explanation about ōmega, meaning apparently the last letter of the Greek alphabet, *ὡμέγα*—to transcribe it into English it would be "homēga." *Sapienti sat!*

The task proposed to the academy, to prepare a better lexicology, is quite an enormous one, as I can illustrate by an example which happens to present itself just at this moment:

At the ninth congress of the German Anatomical Society, which took place in Basel from April 17th to April 20th of this year, a new anatomical nomenclature, prepared by a special commission, was accepted and all anatomists are requested to apply now these *nomina anatomica* thus agreed upon. The title of the elaborate work is: *Die anatomische Nomenclatur. Nomina anatomica. Verzeichniss der von der Commission der anatomischen Gesellschaft festgestellten Namen, eingeleitet und im Einverständniss mit dem Redactionsausschuss erläutert von Wilhelm His.* Mit 30 Abbildungen im Text und zwei Tafeln. It was published as a reprint from the *Archiv f. Anat. u. physiol. Anatomie*, 1895. From the history of this work, as told by Dr. Karl von Bardeleben in the *Deutsche med. Wochenschrift*, 1895, No. 27, I shall give the most interesting details: At the meeting, April, 1887, the officers were Dr. von Koelliker, Dr. Gegenbaur, Dr. His, Dr. Waldeyer, and Dr. K. von Bardeleben. Dr. His made the following motion: "The Anatomical Society is requested to work out the adjustment (*Regelung*) of the whole anatomical nomenclature." At the meeting in Berlin, during the month of October, 1889, a Nomenclature Commission was elected: President, Dr. von Koelliker; members, Dr. O. Hertwig, Dr. His, Dr. Kollmann, Dr. Merkel, Dr. Schwalbe, Dr. Toldt, Dr. Waldeyer, and Dr. Bardeleben. This commission elected first an editor, Dr. W. Krause, and went to work, primarily to secure the necessary funds. Besides three thousand eight hundred marks which were given by the society itself, eight thousand marks were contributed by the academies of Berlin, Vienna, Munich, and Budapest and the Society of Scientists of Leipsic. Later on the following additional members joined the commission: Dr. Brunne, Dr. Henke, Dr. von Kupffer, Dr. von Michalkovicz, Dr. Rüdinger, Dr. Zuckerkandl, Dr. Leboucq (Ghent), Dr. Thane (London), Dr. Turner (Edinburgh), Dr. Cunningham (Dublin), Dr. Romiti (Pisa), and others.

For some chapters special commissions were established; thus, for the veins and lymphatics Dr. Merkel, Dr. Thane, Dr. Toldt; for regions, Dr. Merkel, Dr. Rüdinger, Dr. Toldt; for syndesmology, Dr. Toldt. Finally, a special editorial commission was constituted (Dr. His, Dr. Waldeyer, Dr. Krause), this latter commission for the purpose that the whole should have a uniform character. In regard to the scope of the undertaking there were the following limits agreed upon: Only the descriptive and topographical anatomy of man should be considered, and even that only so far as to cover macroscopical investigation. The names should be all in one language—namely, in Latin. Every part should have one name only; these names should be formed in correct Latin and be as short and as simple as possible; they should simply serve as *memoranda*, not pretending to description or interpretation. Names which are too firmly established, like "musculus sternocleidomastoideus," should be retained. Valvula bicuspidalis and valvula mitralis should both stand; likewise pyramis and pars petrosa, vola and palma, nates and clunes. In regard to authors' names, it was decided to retain some and drop others; final decision in this regard to be left to the future. Special arrangements were made about names in psychiatry, neurology, otology, and laryngology. The original plan to be conservative—to select from those already existing the most appropriate designations—could not be followed. Antiquated and indistinct names, and those of more than one meaning had to be eliminated or had to be distinctly defined as to their meaning. The latter, in many instances, was only possible by making anatomical preparations for this very purpose. Dr. v. Bardeleben, in closing the article on the history of this nomenclature, says: "We hope now that this new anatomical nomenclature which has been created and which has cost so much exertion, time, and money will become a means of mutual understanding, not only between anatomists, but, above all, between investigators and teachers of different nations and languages, and also between teachers and pupils, between anatomists and physiologists, and between pathologists and practitioners—that is, between theory and practice."

This work of the Anatomical Society calls for our admiration and praise; at the same time we may well regret that the Latin and not the Greek language has been chosen. The reasons for this regret may be found in several papers which I have published on the Greek question. The appearance of this Latin nomenclature gives me an explanation why the Berlin medical journals were so reluctant to enter upon the discussion on Greek. Naturally enough, they had to adhere to Latin on account of this publication of the Anatomical Society. The names are not exactly in one language; a great many are latinized Greek, and some are hybrid.

To return to Dr. McCourt and his suggestion: He has not mentioned the attempt which has been made in our own country to revise anatomical nomenclature. The commission appointed in the year 1890 for this purpose has published a number of articles which give us an idea of the intended work. It is suggested that the names shall all be "mononyms" (a new-coined word; it seems to mean nouns without further addition)—for instance, "præcornu" and "post cornu" instead of "cornu anterius" and "posterius"; "dura" for "dura mater cerebri"; "medipedunculus" for "pedunculus cerebelli ad pontem." Much as we may like an American work to succeed, we can not help refusing the linguistic monstrosities which this one contains, and its new and strange-sounding language.

A Greek lexicology will be created as soon as we have familiarized ourselves with living Greek, and not before. As I said at the discussion of Dr. McCourt's paper in the academy, innumerable errors in trying to give Greek names will be made so long as these names are made with the aid of the lexicon only. Everybody who understands more than one living language will agree with me that the most absurd, the most ridiculous expressions are produced when we translate too literally without entering well into the spirit of the languages. There are many eminent college Greek scholars in our profession who have coined and are coining words which they suppose are true Greek, which the genuine Greeks, however, call ἑλληνοφανής, because they are by no means real Greek words. Latinizers have an advantage: dead languages tell no tales.

GALLSTONE DISEASE.*

By W. J. MAYO, M.D.,

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In this short paper I have made but brief reference to the history or literature of gallstone disease, with a view of shortening the time necessary to present the subject.

Webster, of Chicago, from recent investigations, estimates that ten per cent. of males and twenty-five per cent. of females, and thirty-six per cent. of the insane of both sexes, have gallstones.

Schroeder, from fifteen hundred autopsies, estimates that twelve per cent. of adults and two per cent. of children are afflicted with gallstones. Naunyn says that only about one per cent. of those who have gallstones are made aware of their condition by symptoms.

These statistics must be received with a certain degree of caution and probably are high. Autopsies performed in large hospitals are of necessity made upon many who were sick some time before their death, and their lowered vitality might permit of bacterial infection of the ducts and gall bladder, and this, with the sluggish bile current which would be engendered by a protracted illness, is a condition which would not exist in the average mortal free from disease, and tend to render these figures somewhat unreliable. These factors are certainly important, as shown by the high average of gallstones in the autopsies of the chronic insane.

Dr. Kilbourne, of the Second Minnesota Hospital for the Insane, informs me that they are present in at least a quarter of the post-mortems made at that institution.

Ætiology.—Gallstones are usually formed in the gall bladder, but under exceptional circumstances may form in the hepatic ducts. They are always produced by the mucous membrane and bile, and never from the blood. There are two essential factors in their formation: 1. Slow flow of the bile. 2. A catarrhal condition of the mucous membrane, frequently due to a bacterial infection, and usually caused by the *Bacillus coli communis.* Welch found germs in the centre of gallstones even when not a trace of their presence could be detected in the mucous membrane.

The *Bacillus coli communis* is a great secondary invader, waiting for an entrance to be effected by more active and shorter-lived germs, and it is altogether probable that the original invading germ may often have disappeared after sufficiently devitalizing the epithelium so as to permit the coli communis to effect a lodgment. As an indirect cause, the changing abdominal pressure in childbearing women becomes an important factor in influencing the bile flow and an accidental duodenal inflammation may light an ascending catarrh of the bile tract. The frequency of bile stone in hospital inmates may easily be accounted for by their sluggish existence in affecting the bile flow and lowered vitality allowing of germ infection. In spite of the fact that those physically debilitated or of advanced years are most frequently affected with gallstones, the majority of those who seek relief from the suffering engendered are otherwise in good health, and I recently removed one hundred and thirty-two stones from a girl under twenty years of age with a history of colics for three years previous, and many similar operations in the young have been reported. It is an interesting query as to whether a simple catarrhal jaundice might lay the foundation of future gallstones. In several instances I have been able to obtain a history of simple catarrhal jaundice, particularly in childhood, followed by gallstone disease after the lapse of many years.

The common faceted gallstones are usually composed of bile pigments and cement substances from the epithelium, occasionally of cholesterin, when they are crystalline in fracture, light-colored, and often but a single stone, or cholesterin may be the nucleus of an ordinary calculus; not rarely the stones are pure bilirubin and few in number. There are usually either a large number of small stones or a small number of large stones; all the way from one to eight thousand have been found. The largest number I have removed was four hundred and two, from a lady twenty-four years of age, and twice I have found but a single stone.

The diagnosis depends largely upon the pathological condition. Ordinarily gallstones lying free in the gall bladder do not produce symptoms of a very definite nature. Neuralgic pains extending up into the region of the liver and toward the right shoulder, with indigestion and a certain degree of local soreness, may be present. Under some circumstances the irritation of the stones may aid an infective process in causing an ulceration which may end in a contracted gall bladder with adhesions to the surrounding viscera, or even expel the offending stone into the intestine, possibly to cause intestinal obstruction when of sufficient size—a form of ileus of which a number of cases have been reported.

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* Read before the Wabasha, Minnesota, County Medical Society at its annual meeting, July 12, 1895.

It is altogether probable that many cases of dyspepsia of obscure origin depend upon gallstones undiagnosticated.

Colics are not infrequent, especially several hours after eating, as the food passes down the duodenum.

Obstruction of the cystic duct, either temporarily or permanently, at once brings more urgent symptoms. Colics are frequent, and if the obstruction is complete the pain is severe and lasts from a few moments to several days, until either the accumulated fluid in the gall bladder is forced past the obstruction, which ordinarily happens, or rarely a small stone may be pushed on with relief. At times, however, the obstruction is not relieved, and the overstretched bladder is unable to contract with such painful force and terminates either in a cystic accumulation or, if the infection is sufficiently active, eventuates in an empyema of the gall bladder, which, in turn, may form a fistulous tract to the surface.

I have examined two old cases of gall-bladder fistula, self-cured after years of suffering from gallstone obstruction, and have operated on two empyemas of the gall bladder due to occlusion of the cystic duct by stones.

Stones in the cystic duct must be distinguished from renal colic, from diaphragmatic pleurisy, from lead colic, and, when enlarged, from movable kidney. A little reflection will suggest the radical points of difference. Temporary jaundice may accompany either stones in the gall bladder or cystic duct. Under such circumstances it is a valuable sign due to swelling, but its absence does not militate against the diagnosis. Temporary jaundice in obstruction of the cystic duct should be looked upon with a certain degree of anxiety as a possible forerunner of obstruction of the common duct and indicates a more serious state of affairs.

Stones in the common duct are usually the result of the passage downward of stones from the gall bladder, and not infrequently stones in the gall bladder and cystic duct coexist. The larger size of the common duct enables the majority of calculi to readily pass into the duodenum, but at times the large size of the stone, or more frequently a small floating stone, more or less obstructs this large bile duct and produces a well-marked set of signs and symptoms. As a rule, the obstruction is not at once complete, as the steady biliary flow prevents early complete obstruction. The so-called "floating stone," which our great surgical pathologist Fenger has done so much to elucidate, is a very interesting phenomenon depending on the fact that the duodenal opening of the common duct is smaller than the duct itself, and that a stone too large to readily pass out may obstruct the outflow of bile and yet change its position in the common duct, permitting an intermittent biliary outflow, thus causing temporary attacks of jaundice and colic which are short in their duration. There may be a number of colicky attacks with a varying degree of jaundice, which nearly or quite clears up, only to return in a more marked degree. Eventually the obstruction, through irritation and inflammatory swelling caused by the infective cholangeitis which is prone to occur, brings on complete cholæmia. The bile in the blood rapidly reduces the red corpuscles to below three million, or even to one million and a half, with death from exhaustion, or even more rapidly from a suppurative cholangeitis.

These cases are frequently marked by fever, chills, and sweating, at times of almost daily occurrence. The Germans have taught that this is essentially septic in its nature, but the French have proved beyond question that it is due to the irritation of the stone and the absorption of bile without regard to an infective process. Under such circumstances the common duct is often of huge dimensions. It has even been opened under the impression that it was the distended gall bladder; its contents are, however, always bilious. The gall bladder as a rule is small, and, while the liver is at first enlarged, it does not long remain so. The jaundice, with its accompanying itching, hypochondria, slow pulse, and white stools, with the light colics, the fever, chills, and sweats and lack of tumor, aid in the distinction of stone in the common duct. Malaria would not give rise to the persistent jaundice, while an enlarged spleen and the presence of the *Plasmodium malariæ* would aid in the diagnosis.

From cancerous obstruction due to tumor of the liver, pancreas, or duodenum, the diagnosis may be difficult, particularly in the later stages. It should be borne in mind that, as a rule, the presence of a tumor with jaundice is against simple stone in the common duct; while, as pointed out by Mayo Robson, a history of slight colics and intermittent jaundice in the early stages, with fever, chills, and sweats, and without tumor, favors simple stone obstruction.

The mistake of diagnosticating a tumor in case a tongue of liver projects downward in this region, as described by Riedel as a not uncommon phenomenon, should not be made. I have operated twice on these indications, and have found them a reliable means of diagnosis. Fagge, in his great work on *Practice*, long ago pointed out that cancer of the liver and biliary ducts was often complicated with gallstones, and correctly interpreted their presence as the exciting cause of the cancer rather than an accidental complication. Musser estimates that ninety per cent. of persons with cancer affecting the liver also have gallstones, and the danger of the calculi acting as an irritative in the production of cancer should be borne in mind. Twice within a year I have operated in cases of cancer complicated with gallstones; in each, jaundice with an appreciable tumor gave indications of the fatal complication, while a marked history of gallstone disease antedated the final illness by many years.

The prognosis then depends much upon the situation of the stones. Stones lying free in the gall bladder may never give a diagnostic symptom of their presence, although septic processes in the gall bladder due to an infection or a retention may present urgent symptoms for relief.

Stones in the cystic duct, by producing changes in the gall bladder, exhausting colics, or ulceration, require relief. Stones in the common duct are urgent, and demand prompt removal.

The chances of stones passing into the intestine have been greatly overestimated, because of the prevalent idea that a colic means the passage of a stone, which is seldom the case, and even if it did pass, it must be a small one; and the history of this class of patients is that in the small-stone cases there are many stones, and there is no guarantee against future trouble. The idea of the frequency of the expulsion of gallstones has also been due to washing the stools and finding small bodies supposed to be calculi, or the giving of some bland oil, such as olive, which forms soap balls with the intestinal alkalies, and these are many times exhibited as the offending bodies. The possibility of secondary cancer should also be taken into account in the prognosis.

Treatment of Gallstone Disease.—It can be asserted without fear of contradiction that there is no medical treatment of gallstones; it is wholly surgical. We can not in the living body dissolve these calculi, although much can be done for the relief of the disease in a non-operative way when the stones are confined to the gall bladder itself. The internal administration of remedies which increase the rapidity of the biliary flow has a deserved reputation in preventing the formation of stones, phosphate of sodium or a course at the Carlsbad or other saline springs being most popular. As the passage of food through the duodenum is particularly apt to bring on a colic, the use of remedies calculated to allay any existing duodenal catarrh may be of aid, and the avoidance of such articles of diet as the patient soon learns to know as being most liable to start a colic. Glycerin has of late been lauded, as well as many copyrighted preparations of enterprising drug firms. Such allegations are supported by uncertain evidence, derived from the fact that intervals of quiescence are frequent, or based wholly upon the imagination of the owner of the copyright. Olive oil at one time had a great reputation, the examination of the stools after its administration showing quantities of soap balls formed by the action of the intestinal alkalies and shaped by vermicular action. For the relief of pain caused by a temporary blocking of the cystic-duct opening, hypodermic injections of morphine, or even chloroform, may be required.

Surgical Treatment.—While, as a matter of course, even the most energetic of surgeons would not advise operation in every case of gallstone disease, it can be said that, other things being equal, every case of gallstone disease causing marked symptoms should be relieved by removal of the calculi, and if obstruction of the cystic duct has taken place an operation is imperative, while if the stone is in the common duct, delay in operating would be criminal. The situation of the gall bladder, as shown by Hamilton, is very definite in the male, but has a somewhat larger range of position in the childbearing woman, for obvious reasons. The incision for gall-bladder surgery is a matter of some importance. Lawson Tait, the leader in this, as in other branches of abdominal surgery, prefers a vertical incision downward from the tip of the cartilage of the tenth rib. Musser and Keen make use of an incision skirting the margin of the costal cartilage. In a recent article on Hernia in the *Annals of Surgery*, Greig Smith calls attention to the advantages of an incision in the course of the external oblique muscle on a line running from the tip of the tenth cartilage toward the umbilicus, with separation of the fibres of the internal oblique, as giving a better closure of the wound, the essential principle being the same as McBurney's incision for chronic appendicitis. Having observed a well-marked hernia following the vertical cut, I have practised this incision in two instances with advantage. For work on the ducts, an additional incision along the costal margin enables an ample flap to be turned downward and inward, giving a large amount of working space. Cholecystotomy is indicated for the removal of stones from the gall bladder, and is an important part of the method of elevating stones from the cystic duct, not only as an aid in the removal of the impacted stones, but also as there may be stones behind the obstruction. Needling the gall bladder for diagnosis, as originally done by Harley, is useless and dangerous either before or after the abdomen is opened. Even with the finger in the abdomen stones can not always be felt through the gall-bladder wall, and it is always necessary to open this viscus before their absence is decided upon.

Some years ago, before the modern methods of protecting the peritoneal cavity temporarily with gauze were perfected, many surgeons fastened the gall bladder in the abdominal wound and waited several days for adhesions to shut the free peritoneal cavity off. This has the great disadvantage of the loss of the finger in the abdominal cavity outside the gall bladder and ducts as an aid in coaxing the calculus from its bed, particularly when impacted. It is probably the rule that if the contents of the gall bladder are actively infectious it is already adherent, and under such circumstances, if not so adherent, it would be wise to make a secondary opening. In two cases in which the gall bladder was filled with the products of an infective inflammation as well as stones, I found it already adherent, which made the operation largely extraperitoneal by reason of the adhesions to the omentum, colon, and parietal peritonæum. Bobbs, in his original operation, closed the wound in the gall bladder with sutures and dropped it back, and this so-called "ideal" operation has had some adherents, but the objections to it are weighty.

It is urged against suture of the gall bladder in the wound:

1. The chances of a permanent fistula; but if the ducts are open this should not take place. In one of my early operations prolonged biliary leakage gave some annoyance, and vigorous cauterization was necessary for cicatrization. This was due to a too accurate suture of the mucous membrane to the skin, leaving practically a mucocutaneous mouth. In all of my later operations I have used the peritoneal and muscular coats of the gall bladder and carefully avoided the mucous membrane in the suture, thus getting a larger cicatrizing area between it and the skin, with the result that the fistulæ have rapidly closed.

2. The danger of hernia by the interposition of the gall bladder between the margins of the incision. In twenty-five of the twenty-eight cases of immediate suture reported by Elliot gauze drainage was employed, and this would have a parallel effect. In favor of drainage of the gall bladder is the important fact that not infrequently stones will be found extruded into the dressings although all were supposed to have been carefully removed.

In one of my cases, after removing about two hundred small stones, during the next week over fifty more were discharged; in another case two stones were found in the dressings at the end of a week. Drainage also cures the catarrhal condition of the gall bladder, as when sutured into the wound it usually shrinks up into a fibrous cord, or at least by forcible elevation of its normally dependent fundus furnishes free drainage and prevents any retention of fluids or new stone formation.

At times it may be impossible to bring a contracted gall bladder to the surface, but experience has shown that it can be safely drained through the incision, using the omentum, if possible, in forming a channel.

Morison, of England, drains through the loin near the hepatic flexure of the colon, and maintains that fluids naturally gravitate to this point. I can imagine a case of gallstone in which the certainty of complete removal and the healthy condition of the walls of the gall bladder might render suture and dropping back good surgery, but, as yet, I have not met with such a case. The removal of impacted stones from the cystic duct is a matter of great difficulty and may require incision of the duct. In two out of three such cases I have been able to push the stone back into the bladder. In the third, I incised the duct and removed the stone, but, being unable to suture the empty duct with any degree of accuracy, drained with a rubber drain, and suture of iodoform gauze to the proper place by means of fine catgut, which will hold long enough to cause adhesions at the desired point and yet be absorbed sufficiently early to allow removal of the gauze.

The value of fine catgut for the accurate placing of deep gauze tampons can not be overestimated. The removal of stones from the common duct is often an operation of the greatest difficulty, and in the case of a floating stone may be impossible.

Fenger in two cases introduced his finger into the dilated common duct, but was unable to reach a floating stone which retreated upward into the hepatic ducts.

If the stone can be found, the duct should be incised over it, and before removal the important suggestion of Elliot, of Boston, should be carried out—that is, the placing of the sutures after incision while the stone is yet in position. It is exceedingly difficult to place the sutures after removal of the stone.

In one of two cases of stone in the common duct I could not find the stone and performed cholecystenterostomy with the Murphy button. The patient, an old man, completely jaundiced, is now alive and well, two years after the operation. The operation of cholecystenterostomy in obstruction of the common duct by means of the mechanical device of the brilliant Murphy is of inestimable value, and in the feeble cholæmic condition which this form of obstruction quickly produces in the victim is a life-saving procedure.

The Germans still do Winnewarter's suture method of cholecystenterostomy. The use of this method for routine treatment of all forms of gallstones is not logical, and with few exceptions the union of gall bladder and intestine should be confined to complete obstruction of the common duct. For simple stones without their removal, and for obstruction in the cystic duct, it can not be considered good surgery. Cholecystectomy was advocated by Langenbeck, but is now seldom done as a matter of choice. At times a small, friable gall bladder which can not be brought to the surface is tied off and the region thoroughly drained to meet a pressing indication.

Spasmodic attempts to popularize removal of the gall bladder have been made at various times, but as a routine procedure it is uncertain. I have done sixteen operations for gallstones—eight for simple removal of unimpacted stones, three for stones in an empyæmic or cystic gall bladder, three for stones impacted in the cystic duct, and two for stones obstructing the common duct—with one death, in a case of suppurating gall bladder, with perforation and septic peritonitis already present. The patient died in a few hours.

PRELIMINARY REPORT ON SIX HUNDRED AND TWELVE CASES OF CONVERGENT SQUINT,

WITH SPECIAL REFERENCE TO THE FINAL RESULTS OF OPERATION.*

By CHARLES STEDMAN BULL, M. D.,
NEW YORK.

CAREFULLY tabulated statistical reports of the results of operations undertaken for the cure or improvement of convergent squint have formed but little part of the ophthalmic literature of the last fifty years; and this fact has produced in the minds of the profession at large, and especially in the minds of some ophthalmologists, the feeling that the operation of tenotomy for the cure of squint is of doubtful value in many cases. The absence of useful, working statistics on this point has, no doubt, been largely due to the fact that it is extremely difficult to follow out these cases for a sufficiently long time after the operation, because the patients are so easily lost sight of, especially if they be hospital cases, and if the first operation has proved only partially successful.

The feeling that operative procedures for the cure of squint are of doubtful value in many cases arises largely from the discrepancy in our ideas as to what constitutes a "cure" of convergent squint. If by "cure" is meant merely the removal of all visible disfigurement, with apparent restoration of parallel axes of the eyes, then the results of operation should be deemed very satisfactory. But if something more is meant, and we understand by the word "cure" not only the apparent restoration of parallel axes, but the improvement of vision in the squinting eye, the establishment of binocular vision, and the ability of the patient to use the eyes for all purposes, except close work, without correcting glasses, then our ideas of the value of tenotomy must be materially modified.

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* Abstract of a paper read before the American Ophthalmological Society, July 17, 1895.

So wide is the difference of opinion among ophthalmologists as to the existing conditions in squint, the value of operative interference, and the nature of the operation which is to be done, that the writer has long held the view that the whole subject of strabismus is the least understood by modern ophthalmologists in the whole domain of ophthalmic science. We need but to glance over our text-books and the contents of our journals to be readily convinced of the truth of this statement. Leaving entirely out of consideration the different views that are held as to the nature and causation of squint, there are many of our colleagues who question the wisdom of operating in early childhood, while others hold that in many instances no operation is necessary.

It is not the intention of the writer of this paper to enter into a discussion of the general subject of squint. The paper is intended to be merely a preliminary report on the effects of operative interference upon the condition of abnormal convergence of one or both eyes, including such other statistical details as may be necessary for a proper appreciation of the results obtained.

The entire number of 612 cases occurred in the private and hospital practice of the writer, and all the cases were carefully followed up and watched for a length of time varying from six months to ten years. All examinations of the refractive and muscular conditions of these cases, all the various operations, and all subsequent observations were made by the writer himself. A much larger number of patients have been examined and operated on than the 612 here considered, but the cases could not be followed with any accuracy for a longer period than a few weeks, and hence they have formed no part of these statistics. Whatever conclusions may be drawn from these statistics must therefore be based solely on the 612 cases here tabulated.

No case of a person under six years of age has been included, owing to the difficulty of testing the refraction and of obtaining anything like an accurate idea as to the existing acuity of vision in very young patients. In all cases of equal or approximately equal refraction, full correction by glasses was ordered immediately after the operation, and these glasses the patients were directed to wear constantly for a varying length of time. The faithfulness with which these directions were carried out varied with the frequency with which the patients were subsequently seen, and the length of time they were under observation. When the refraction differed markedly in the two eyes, full correction for the non-squinting eye and partial correction for the squinting eye was ordered, and in some instances the strength of the latter glass was increased as time elapsed.

The cases were about equally divided between the sexes, there being 304 males and 308 females.

The refraction was in the great majority of instances hypermetropic, these statistics agreeing on this point with all previous statistics hitherto published. The refractive condition of the 612 cases was as follows:

Simple hypermetropia in 521 cases.
Simple hypermetropic astigmatism in 24 cases.
Compound hypermetropic astigmatism in 34 cases.
Simple myopia in 13 cases.
Simple myopic astigmatism in 3 cases.
Compound myopic astigmatism in 2 cases.
Emmetropia in 15 cases.

There were 57 cases of anisometropia and 2 cases of antimetropia.

The 15 cases of emmetropia were so regarded because, while under the influence of atropine, the vision for twenty feet was made perceptibly worse by a glass of + D. 0·50, whether spherical or cylindrical.

A study of the tables showing the degree of refraction in each case gives some interesting data.

The 579 cases of hypermetropic refraction were divided as follows:

Under D. 1, in one or both eyes, 27 cases.
Between D. 1 and D. 2, in one or both eyes, 205 cases.
" D. 2 and D. 3, " " " 147 "
" D. 3 and D. 4, " " " 95 "
" D. 4 and D. 5, " " " 76 "
" D. 5 and D. 6, " " " 51 "
" D. 6 and D. 7, " " " 20 "
" D. 7 and D. 8, " " " 5 "
" D. 9 and D. 10, " " " 1 "
Over D. 10, in one or both eyes, 2 cases.

The cases of myopic refraction varied between D. 0·50 and D. 9.

Amblyopia or defective visual acuity was a very marked feature in the squinting eye, as might have been expected, but a study of the tables shows also a more or less decided subnormal acuity of vision in the fellow eye. The tables also show a by no means inconsiderable number of cases in which there was no loss of visual acuity in either eye.

There was defective vision in the squinting eye in 236 cases, or about thirty-seven per cent.

There was defective vision in both eyes in 291 cases, or about forty-eight per cent.

There was no amblyopia in either eye in 85 cases, or about fifteen per cent.

The tests for vision were made first without the use of atropine, and subsequently the accommodation was paralyzed and the tests repeated in all cases, except where the age of the patient rendered it unnecessary.

The operative procedures employed in the treatment of these cases consisted of simple tenotomy of one internal rectus; tenotomy of the internal rectus of each eye at different periods; simultaneous tenotomy of both internal recti; tenotomy of the internal rectus of one eye and advancement of the external rectus of the same eye; tenotomy of the internal recti of both eyes and advancement of the external rectus of the squinting eye; and simultaneous tenotomy of the internal recti of both eyes, followed at a varying length of time by a second tenotomy of the internal rectus of the squinting eye.

Simple tenotomy of the right internal rectus was done in 72 cases.

Simple tenotomy of the left internal rectus was done in 92 cases.

Tenotomy of both internal recti at different periods was done in 186 cases.

Simultaneous tenotomy of the internal rectus of both eyes was done in 20 cases.

Tenotomy of the right internal rectus and advancement of the right external rectus was done in 91 cases.

Tenotomy of the left internal rectus and advancement of the left external rectus was done in 131 cases.

Tenotomy of both internal recti and advancement of the external rectus of the squinting eye was done in 14 cases.

Simultaneous tenotomy of the internal rectus of both eyes and subsequent tenotomy of the internal rectus of the squinting eye was done in 6 cases.

The results of the various operations upon the degree of the squint were as follows:

Simple tenotomy of the internal rectus of one eye was done in 164 cases. The final result was:

Convergence in 102 cases, or about sixty-two per cent.

Parallelism in 55 cases, or about thirty-three and a third per cent.

Divergence in 7 cases, or about four per cent.

In all cases of resulting convergence, the degree was much less than before the operation. No second operation in any one of these 102 cases was permitted.

Tenotomy of the internal rectus of both eyes at different periods was done in 186 cases. The final result was:

Convergence in 144 cases, or about seventy-eight per cent.

Parallelism in 33 cases, or about seventeen per cent.

Divergence in 9 cases, or about five per cent.

Simultaneous tenotomy of both internal recti was done in 20 cases. The final result was:

Convergence in 13 cases, or about sixty-six per cent.

Parallelism in 1 case, or about five per cent.

Divergence in 6 cases, or about thirty per cent.

Tenotomy of the internal rectus and advancement of the external rectus of the squinting eye was done in 222 cases. The final result was:

Convergence in 38 cases, or about sixteen per cent.

Parallelism in 178 cases, or about eighty per cent.

Divergence in 6 cases, or about two and four fifths per cent.

Tenotomy of the internal rectus of both eyes and advancement of the external rectus of the squinting eye was done in 14 cases. The final result was:

Convergence in 3 cases, or about twenty-one per cent.

Parallelism in 9 cases, or about six per cent.

Divergence in 2 cases, or about fourteen and two sevenths per cent.

Tenotomy of the internal rectus of both eyes, and subsequently a second tenotomy of the internal rectus of the squinting eye, was done in 6 cases. The final result was:

Convergence in 3 cases, or fifty per cent.

Parallelism in 1 case, or about sixteen and two thirds per cent.

Divergence in 2 cases, or about thirty-three and a third per cent.

The general percentage of final results was as follows:

Whole number of cases operated was 612.

Resulting *convergence* in 307 cases, or about fifty per cent.

Resulting *parallelism* in 277 cases, or about forty-five per cent.

Resulting *divergence* in 32 cases, or about five per cent.

In all cases in which convergence was the final result, the degree of convergence was decidedly less than that of the original defect.

A few words now in regard to the question of the supposed improvement in vision of the squinting eye.

There was an improvement in the visual acuity of the squinting eye alone, after the operation, in 7 cases.

There was an improvement in the vision of the fellow eye alone in 65 cases.

There was an improvement in the vision of both eyes in 14 cases.

A somewhat careful study of these cases has led me to the conclusion that the instances of improvement in the visual acuity were undoubted, but that, while occurring *after the operation*, they could not be considered as *due to the operation*, but rather to the stimulating beneficial effect induced by wearing the full correction of the refractive error.

Complications.—A number of the cases were complicated by other lesions, the existence of which may have had some influence upon the final result after operation.

There were 30 cases in which there was more or less marked loss of power in the external rectus. In 6 of these cases the paresis of the muscle was due to diphtheria, and in 4 cases to falls upon the head. There were 9 cases of more or less marked blepharitis or blepharo-adenitis, all of which recovered after the operation and fitting with correcting glasses. There were 2 cases of strabismus sursumvergens associated with the convergent squint, and in both the upward deviation disappeared after the operation. There were 18 cases of corneal opacity more or less distinctly marked.

In 7 cases the appearance of the squint had been immediately preceded by measles, and in 2 cases by scarlatina.

General chorea existed in 2 of the cases and rotary nystagmus in 7 cases.

In 8 cases the squint had followed an attack of epileptiform convulsions, and in 3 cases it occurred during an attack of pertussis.

The convergence was complicated in 2 cases by congenital ptosis; in 1 case by facial paralysis, and in 2 cases by excanthis.

In two of the myopic cases detachment of the retina occurred after the operation.

In four cases there was no fixation with the squinting eye either before or after the operation.

A cursory review of the final results of the operation on the degree of the squint would leave the surgeon to believe that the greatest effect is to be expected from tenotomy of the internal rectus and advancement of the external rectus of the squinting eye, and that the method of operating by simultaneous tenotomy of the internal recti of both eyes is the least valuable.

A more careful study of each case, however, has led the writer to the formulation of the following conclusions, which may be modified by lapse of time and a larger experience :

1. If the squint is in one eye and of the alternating variety, there is usually very little amblyopia in either eye and but little difference in the refractive error of the two eyes. In the majority of these cases free tenotomy of the internal rectus of the eye which usually squints, with immediate full correction of the refractive error, will give as a final result either apparent parallelism or such a slight degree of convergence as is not noticeable under the glasses.

2. If the squint is always in the same eye there is almost always a decided difference in the refraction of the two eyes and a decided amblyopia in the squinting eye. In these cases, if there is no loss of power in the external rectus, the best results are gained by tenotomy of the internal rectus and advancement of the external rectus of the squinting eye and subsequent full correction by glasses.

3. If there is marked amblyopia in the squinting eye and some loss of power in the external rectus of the same eye, the best operation will be found to be tenotomy of the internal rectus and advancement of the external rectus of the squinting eye, and at a varying period later tenotomy of the internal rectus of the other eye. Simultaneous tenotomy of the internal rectus of both eyes and advancement of the external rectus of the squinting eye is not a desirable operation in these cases, as it too often leads to permanent divergence.

4. If, however, the squinting eye is markedly amblyopic and the external rectus of this eye is entirely paralyzed, the best results are gained by a simultaneous tenotomy of the internal rectus of both eyes and advancement of the external rectus of the squinting eye.

5. In the emmetropic cases, fifteen in number, the best results were gained by tenotomy of the internal rectus of the squinting eye, followed at a varying period by tenotomy of the internal rectus of the other eye. The reason for this is not as yet apparent.

6. There will always be a number of cases, by no means inconsiderable, in which it will be impossible to decide in advance what method of operating will be likely to give the best results, and in which what we do will be more or less a matter of guess-work.

7. Any complication which interferes with the visual acuity of a squinting eye, such as corneal maculæ, striæ in the lens, or extensive chorioidal atrophy, must be regarded as pointing to the necessity of more extensive operative interference than simple tenotomy, even when no great refractive difference exists between the eyes and where no paresis of the external rectus is present.

In studying closely the statistics of a considerable number of cases of convergent squint, one of the lessons taught is that though defective vision is probably one of the causes of permanent squint, yet the results of the operation are satisfactory in a very large number of cases. Another fact that becomes evident is that in a by no means inconsiderable number of cases a tenotomy on the squinting eye is useless, and we are forced to do a tenotomy on the other eye.

Schweigger seems to be correct in saying that in the majority of cases periodic squint is cured by a simple tenotomy, and that an imperfect result can be supplemented by tenotomy on the other eye.

The absence of fixation in the squinting eye in some cases of marked amblyopia renders it doubtful whether a satisfactory final result can be gained by any operation. Not a few cases may be found in the tables (presented with the paper at the meeting) in which only slight improvement was gained even by tenotomy of both internal recti and advancement of the external rectus of the squinting eye.

It should not be forgotten that a primary good result very often retrogresses, and surgeons do not sufficiently consider that the strength of the antagonistic muscle exerts a powerful influence on the ultimate result of the operation. Apparent loss of power in the external rectus does not always mean actual loss of power, and Schweigger has some reason for recommending gymnastic exercise of the muscles by alternately turning the eyes to the right and left as a useful preliminary to the operation for squint. It is a mistake to suppose that advancement of a muscle immediately brings about a permanent position of this eye, for, as in simple tenotomy, the immediate result never remains permanent, but usually diminishes somewhat, though it may increase.

CEREBRAL ARTERIAL THROMBOSIS.*

By GUSTAVUS ELIOT, A. M., M. D.,
NEW HAVEN, CONN.

The arteries of the brain may be obstructed, from the interior, in two ways. A small mass of extraneous material may be carried in the blood from some other part of the body to the brain, and, having reached an artery of too small a calibre to permit its passage further, may become lodged and obstruct the flow of blood through the vessel. Such an obstructing mass is called an embolus. On the other hand, the blood may coagulate in one or more of the arteries of the brain, and form a clot which obstructs the circulation. Such a clot is called a thrombus. The pathological process which results in the formation of a thrombus is called thrombosis. The results which follow the obstruction of one of the cerebral arteries by an embolus or a thrombus are so similar, and also so closely resemble the effects of a rupture of one of the cerebral arteries, that some writers describe these three distinct pathological lesions and their results in a single chapter. But the lesions themselves are so distinct, and the therapeutic measures which are adapted to each condition are so different, that one may not unwisely—even at the risk of some repetition—discuss the three conditions separately. The present paper will be limited to a study of thrombosis of the cerebral arteries and its consequences.

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* Read by title at the one hundred and third annual meeting of the Connecticut Medical Society, at Hartford, May 23, 1895.

The formation of a thrombus in a cerebral artery may be due to a diminution in the calibre of the vessel by external pressure, or as a result of disease; to a pathological alteration of the endothelial lining of the vessel; to a change in the quality of the blood; or to a diminution in the force and rapidity of the flow of the blood in the artery. Frequently two or more of these abnormal conditions co-operate in favoring the formation of a thrombus. The most important of these conditions is a change in the structure of the lining membrane of the vessels. This may consist of a fatty, atheromatous, calcareous, or syphilitic degeneration of the endothelium, or of endarteritis deformans. When either of these changes is present, slow and weak action of the heart is an important accessory cause. These structural changes, except when due to syphilis, are more common in advanced age. Consequently, thrombosis is observed most frequently in old persons. The deterioration in the quality of the blood which predisposes to thrombosis occurs in individuals who have suffered from one of the infectious diseases, and therefore the disease may sometimes be seen in young persons. When it is due to syphilis, it also usually occurs among those who are not yet old.

When a cerebral artery becomes obstructed by the formation of a thrombus, the usual result is anæmia of that portion of the organ which is supplied with blood by the affected artery. This interferes with the nutrition of the part, and is followed by necrosis and softening. In certain situations the collateral circulation may furnish a sufficient supply of blood, so that the nutrition of the part is not permanently cut off. The thrombus itself may become organized, or may undergo calcareous degeneration, or may soften and break down, and portions of it may be carried into other parts of the circulatory system.

The symptoms depend upon the location of the thrombus and the rapidity of its formation. Their onset is usually gradual. The most common premonitory symptoms are headache, dizziness, numbness of the extremities, impairment of memory, mental disturbance, difficulty of speech, and weakness of the muscles of the extremities. The attack may, however, be sudden, and then the most prominent feature is paralysis. In all severe cases paralysis occurs sooner or later. It may come on suddenly or gradually. The distribution and extent of the paralysis depend, of course, upon the localization of the lesion. Both sensation and motion are usually affected. If the lesion is not so extensive or located in such a position as to cause speedy death, gradual improvement may occur. Relapses, however, may be expected, because the arterial degeneration which predisposes to the formation of a thrombus does not tend to recovery, and because it affects arteries in different parts of the brain simultaneously.

The diagnosis of cerebral arterial thrombosis must be considered with reference to cerebral embolism and cerebral hæmorrhage. Nor is it always possible to make a certain diagnosis. If a young person who has a cardiac lesion, but is in other respects in good health and has not recently suffered with any blood-destroying disease, suddenly becomes hemiplegic, the disease is probably cerebral embolism. If a person over forty years of age, who has calcareous arteries or the arcus senilis, who has also a florid complexion and a strong pulse, suddenly becomes hemiplegic and comatose, the disease is probably cerebral hæmorrhage. If, on the other hand, a patient who is past middle age, who presents external evidence of arterial degeneration, and who has a weak heart, suffers from dizziness, numbness of one or of several extremities, headache, difficulty of speech, impairment of mind, and weakness increasing to paralysis of sensation and motion of certain muscles, the disease is probably cerebral thrombosis. But the problem is not usually so simple. Cerebral thrombosis is not limited to old persons. It may occur in those who have organic cardiac disease, and the symptoms may develop suddenly. On the other hand, cerebral hæmorrhage may be preceded by premonitory symptoms, the symptoms of its occurrence may come on rather gradually, coma may be slight and transient, and paralysis may be partial and may gradually diminish.

The prognosis of cerebral arterial thrombosis is not very favorable. The disease usually occurs in persons who already are enfeebled by disease or age. The most common predisposing causes are associated with the degenerations of advanced age. These degenerative changes take place before the thrombus forms, and it is not easy to restore to a normal condition structures which have already undergone degeneration. Consequently, the disease is likely to be progressive or recurrent. Considerable improvement may occur. The patient may continue to live for a long time, and most of the symptoms which have been present may disappear, but generally after a time other attacks occur, and ultimately he dies as a result of the cerebral disease. If the patient becomes comatose, the chances of recovery are greatly diminished.

The indications for treatment are to increase the action of the heart, to increase the calibre of the arteries, and to diminish the coagulability of the blood. No single drug fulfills these indications more completely than ammonia. The most useful preparations are the carbonate and the aromatic spirit. In urgent cases the dose should be frequently repeated. The bromides promote relaxation of the vessels and relieve cerebral irritability. The iodides also aid in causing relaxation of the vessels, and diminish the coagulability of the blood. An admirable combination recommended by Bartholow consists of a mixture of ammonium carbonate, ammonium bromide, and ammonium iodide in solution of ammonium acetate. In cases of chronic cerebral arterial thrombosis, with symptoms of moderate severity, this combination of remedies is exceedingly useful. It is, however, unfortunately very unpalatable. If it is necessary to render it more agreeable in taste, the ammonium iodide may be omitted. If insomnia and restlessness are not conspicuous symptoms, the ammonium bromide may be omitted. If still further change is necessary, the compound syrup of sarsaparilla may be substituted for a part of the solution of ammonium acetate, or the whole of the latter may be omitted, and the unpleasant flavor of the ammonium carbonate may be partially disguised by the addition of acacia.

Another remedy of great value is alcohol, which increases the action of the heart and causes relaxation of the arteries. Digitalis or strophanthus may be used to increase the force of the heart's action, but nitroglycerin should generally be given in connection with either of them. Strychnine is useful both as a cardiac and as a general tonic.

In addition to the administration of drugs with special reference to the condition of the cerebral arteries and of the circulation in them, it is important also to promote the general nutrition of the entire body. Free action of the bowels must be secured. The secretion of the kidneys must be maintained. The stomach must be kept in good condition, so that food may be easily assimilated. The patient must be kept quiet. The surface of the body and the extremities must be kept warm. Abundance of fresh air must be provided. The diet should be light and easily digestible. An adequate amount of sleep must be insured. As the symptoms subside, tonics, with gentle massage, assist in improving the patient's condition.

No. 209 Church Street.

NOTE ON THE

ÆTIOLOGY AND NATURAL CURE OF GOÎTRE.

By ALBERT S. ASHMEAD, M. D.

I can not forbear noting a fact which seems to me very curious, which I find in Forbes's writings on the Aymaras of Bolivia. In certain provinces the Indians suffer much from goître, which in the Aymara tongue is called *ccotosis*. These same Indians are clay-eaters; the clay, which they call "*ppassa*," is composed of silica, alumina, lime, magnesia, protoxides of iron and manganese, potash, water, and organic matter. It is supposed to dilate the stomach and thus keep the food longer under the action of the gastric juice.

In an article published recently in the *British Medical Journal*, entitled Notes on the Ætiology of Goître, Dr. H. C. L. Morris, of Hambleden, Buckinghamshire, England, reports fifty cases of goître in a population of two thousand. The soil there is clayey, and the drinking water is obtained through deep wells, sunk in a chalky soil, composed of carbonates of calcium and magnesium. He thinks that the water here is the sole cause of the goître, because no cases occur on the tops of the hills, where they use spring water. "On the other hand," says Dr. Morris, "heredity has nothing to do with the ætiology, nor has intermarriage; for in one village where they are very largely intermarried the inhabitants are clear of the disease."

I may add that among the Indians of Bolivia dried seaweed has been used, time out of mind, for its cure. This method of treatment is the natural form of the more artificial iodine compound treatment adopted by Europe in the eighteenth century.

Changes of Address.—Dr. Eugene Caravia, to No. 47 West Twenty-seventh Street, New York; Dr. George C. Mosher, to No. 613 East Ninth Street, Kansas City.

AN UNUSUAL COMPLICATION OF

A LIPOMA AND SPINA BIFIDA.

By CLIFF LINDSEY, M. D.,
SURGEON TO FERGUS COUNTY HOSPITAL, LEWISTOWN, MONT.

Mr. W. V., aged thirty-five years, gives the following history of a small tumor located in the region of the ninth, tenth, and eleventh dorsal vertebræ:

About four years ago he was thrown from a horse, falling on his back. He was confined to his bed two days from the effects of the fall. A year afterward a small tumor was noticed, of about the size of half an English walnut, which has grown, up to the present time, to about the following size: two inches and a half long, an inch and a half wide, and an inch in thickness.

It never gave him very much trouble, only when he rode all day either on horseback or in a lumber wagon, when it would lay him up for a day or so; it was painful at those times, but at no other. He would also have slight attacks of vertigo lasting for two or three minutes.

On examination I found a small fatty tumor of about the size of a hen's egg, freely movable under the skin, and apparently having no communication with the spine. No fluctuation and some pain on pressure. I operated on him on June 25, 1895. He had some trouble with vomiting while being etherized, which took about thirty minutes. A straight incision about five inches long was made directly over the tumor. A careful dissection around the tumor and on the under side revealed a small spina bifida intimately connected with it and in which I accidentally cut a small opening in trying to separate them. There was an escape of about half an ounce of spinal fluid, which I stopped by snapping an artery forceps on the opening. I then finished the removal of the tumor and stopped the capillary hæmorrhage by warm compresses of bichloride gauze. I then removed the artery forceps from the sac and enlarged the opening somewhat to examine the sac. Finding no nerve roots in the sac, I made a careful dissection around it and ligated it with catgut and removed it entirely. I stitched up the external cut without drainage.

The patient made an uneventful recovery. He had some slight pain for the first twenty-four hours, but none after that. The temperature never reached 99·5° F. at any time. In five days he was sitting in a chair and in eight was walking around in the house. The stitches were removed on the ninth day The wound healed throughout by primary intention, and he was discharged in two weeks entirely well and free from all former symptoms.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 11 to August 17, 1895:*

Ewen, Clarence, Major and Surgeon. The extension of leave of absence granted him on account of sickness is further extended two months.

Gibson, R. J., Captain and Assistant Surgeon. The leave of absence for seven days granted him is extended twenty-three days.

Powell, Junius L., Captain and Assistant Surgeon. The leave of absence granted him is extended one month.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 17, 1895:*

Guest, M. S., Assistant Surgeon. Ordered to the U. S Steamer Minnesota.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. APPLETON & CO.
Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, AUGUST 24, 1895.

THE LUMBO-ABDOMINAL WAVE IN PERITONEAL EFFUSIONS.

IN the *Lyon médical* for July 28th there is an article on this subject by Professor L. Bard. The ascitic wave, he says, is so well known that it is unnecessary to refer to its characteristics. It has been the practice to search for it on one side or the other, with the patient lying on the back, and he does not remember to have found any mention of any other mode of eliciting this sign, although he has not made any special literary researches with regard to the subject.

He has ascertained by the examination of several patients that the ascitic wave could be obtained with much distinctness and ease by searching for it from behind, with the patient placed in a sitting posture, and it is to the wave perceived by this method that the author has given the name of lumbo-abdominal wave. The front hand may be placed on various parts of the abdomen, while the posterior hand percusses the region of the quadratus lumborum on each side of the vertebral column.

Just as in searching for the wave in front, we must be on guard, he says, against a transmission of undulations by the superficial soft parts, but this may be avoided if the anterior hand is not placed too near the lateral surface of the trunk; the superficial concussion never spreads as far as the median line, especially at the hypogastrium. The wave is not formed decidedly except from behind forward; it is very attenuated, or even is not found at all, except in cases of very abundant effusion, if formed from before backward.

The introduction of the lumbo-abdominal wave into the symptomatology of ascites would have only a very secondary importance, says M. Bard, if it was but a different mode of observing the anterior wave, for it would have absolutely the same value and significance. On the contrary, he says, from observations that he has been able to make, this method of searching for the wave presents particular advantages from two points of view: In the first place, the sign is a very early one, which may reveal a somewhat abundant effusion as yet inaccessible to other methods of exploration. In this case, the patient should be placed in the sitting posture, slightly leaning forward, and one hand of the investigator should be placed on the median line, at the lower part of the hypogastrium, immediately above the pubes. Under these conditions the wave may be perceived early, and as a sign of the onset of effusion it may rank with the uterine ballottement spoken of by M. Tripier. The author remarks that he does not know whether it can be compared with this, from this point of view; the fact is not probable; it has, however, he thinks, the advantage of being found in the two sexes, and it is more significant and more easily elicited than the median dullness in the genu-pectoral posture.

In the second place, it acquires a particular importance for the exploration of the abdomen in cases of very abundant and tense ascites preventing the appreciation of the nature of the peritoneal contents by palpation. The author says that he has been able to ascertain that the lumbo-abdominal wave is absent or extremely attenuated in cases where adhesions or hard masses exist in the abdomen, which act as an obstruction in the path leading from one of the two exploring hands to the other. In such cases the wave may be very decided on one side and entirely absent on the other side, when the anterior exploration does not reveal any difference between the two sides of the abdomen. After paracentesis M. Bard has been able to find, by palpation in the left flank, hard masses which explained the difference between the lateral waves, and testified to their value. The liquid being reproduced, the hard masses again become inaccessible to anterior exploration, but the lumbo-abdominal wave continues to reveal their presence.

It is easy, says the author, to foresee that observation of the lumbo-abdominal wave, and especially the study of its variations or of its modifications, may be turned to account in the diagnosis of ovarian cysts and of other intra-abdominal liquid collections from peritoneal effusions. On this subject, however, he can not express an opinion, as he has had no occasion to observe a patient of this class since his attention has been drawn to the point.

MINOR PARAGRAPHS.

A NEW METHOD OF ARTIFICIAL RESPIRATION.

THE *Gazette médicale de Paris* for August 10th contains an abstract of an article on a method of inducing respiration, by Dr. Berthold Beer, which appeared in the *Wiener medicinische Blätter.* The method consists in the employment of ice as follows: The mucous membrane of the lips and of the mouth is rubbed slowly with a piece of ice, the rhythm of the motion corresponding as much as possible to that of normal respiration. In the cases observed by Dr. Beer the result was a return of respiration, very strong at first, but, with the continued application of the ice, becoming very regular, quiet, and deep. The ice used in this way is said to have, moreover, a general sedative effect, and the author has employed this quieting action with success in the treatment of cerebral troubles. Dr. Foges, of Vienna, has obtained equally favorable results with this treatment in two cases of asphyxia. In all cases it is a method that may be employed for several hours at a time, as it is harmless for the patient and easy for the physician. It also offers other advantages owing to its sedative action.

THE HARLEM HOSPITAL.

SEVERAL weeks ago we expressed our opinion of the plan, then determined upon and now in course of execution, of reorganizing the staff of the Harlem Hospital. That opinion we still hold. It is to the effect that it is unjust for the Commissioners of Public Charities and Correction to dismiss the members of the staff, all or any of them, unless for misconduct, neglect of duty, or incompetence, openly proved on formal investigation. That this injustice is keenly felt by the gentlemen of the hospital staff is shown in a letter which we elsewhere reprint from the *Journal of the American Medical Association.* We think the letter gives expression to some inaccuracies and misapprehensions, and we doubt if the writer is wise in making such a capital point of the action taken by two of the medical schools of New York. The fundamental trouble is that the hospitals are under the government of laymen, and there is only one way to curb their arbitrary habits in the matter of dismissals. That is for new appointees to decline to serve as successors to men who have been dealt with unjustly. This of course involves self-sacrifice and might at first sight seem out of the question. It has lately been practised in Philadelphia, however; why may we not hope for some instance of it in New York?

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 20, 1895:

DISEASES.	Week ending Aug. 13.		Week ending Aug. 20.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	11	1	28	1
Scarlet fever	24	2	30	1
Cerebro-spinal meningitis	1	0	0	0
Measles	115	5	113	8
Diphtheria	162	32	128	13
Small-pox	0	0	1	0
Tuberculosis	40	108	126	107

The American Association for the Advancement of Science.—The forty-fourth meeting will be held in Springfield, Mass., on August 28th, 29th, and 30th, and September 2d, 3d, 4th, and 5th. The programme includes the following papers: The Relations of the Industries to the Advancement of Chemical Science, by Mr. William McMurtrie, of New York; Recent Views regarding Classification of the Elements and the Periodic System, by Dr. F. P. Venable, of Chapel Hill, N. C.; Remarks on International Standards of Analysis of Steel, by Dr. C. B. Dudley, of Altoona, Pa.; A Provisional Schedule of Admissible Limits of Accuracy in Certain Metallurgical Analyses, by Professor E. D. Campbell, of Ann Arbor, Mich.; The Use of Thiacetic Acid as a Laboratory Reagent, by Professor T. H. Norton, of Cincinnati; On the Sulphides of Arsenic formed in Analytical Work, by Professor Paul C. Freer, of Ann Arbor, Mich.; The Teaching of Quantitative Analysis, by Dr. G. C. Caldwell, of Ithaca, N. Y.; Bibliography as a Feature of the Chemical Curriculum, by Dr. H. C. Bolton, of New York; The Nature of Double Salts and Perhalide Salts, by Dr. F. P. Venable, of Chapel Hill, N. C.; Instruction in General Chemistry, by Dr. C. L. Jackson, of Cambridge, Mass.; To what Extent can Theoretical Chemistry be Introduced into Elementary General Chemistry? by Dr. Alexander Smith, of Crawfordsville, Ind.; The Relative Arrangement of Theory and Description in a Course of Inorganic Chemistry, by Dr. James L. Howe, of Lexington, Va.; Chemistry as a Liberal Education, by Dr. Peter T. Austen, of Brooklyn; The Products of Pathogenic Bacteria, by Dr. E. A. de Schweinitz, of Washington, D. C.; Some Points connected with the Chemistry and Physics of Metabolism, by W. O. Atwater, of Middletown, Conn.; The Action of Mass in Oxidation by Chloric Acid, with Special Reference to Speed of Reaction, by Dr. Robert B. Warder, of Washington, D. C.; Helium and Argon, by Dr. H. N. Stokes, of Washington, D. C.; The Teaching of Organic Preparations, Laboratory Methods, Systems, Scope, Time, and Previous Preparation, by Professor Paul C. Freer, of Ann Arbor, Mich.; Some Inquiries respecting Inherent Limitations in the Accuracy of Analytical Work in General, by Dr. A. B. Prescott, of Ann Arbor, Mich.; Laboratory Construction and Equipment, by Professor T. H. Norton, of Cincinnati; How closely shall we Follow the Periodic Law in Arranging a Course of Chemistry? by Dr. F. P. Venable, of Chapel Hill, N. C.; Journal Reviews, by Professor W. A. Noyes, of Terre Haute, Ind.; A Record of Progress in Agricultural Chemistry, by Dr. H. W. Wiley, of Washington, D. C.; Recent Progress in Physical Analysis of Soils, by Professor Milton Whitney, of Washington, D. C.; and the Chemistry of Foods and Nutrition, by Professor W. O. Atwater, of Middletown, Conn. Papers will also be read by Professor W. E. Stone, of Lafayette, Ind., Dr. Ernest E. Smith, of New York, Dr. V. C. Vaughan, of the University of Michigan, Dr. F. Hoffman, of New York, and Dr. W. H. Seaman, of Washington, D. C.

The Harlem Hospital.—The following letter, dated New York, August 8, 1895, and signed "Justitia," was printed in the *Journal of the American Medical Association* for August 17th:

"There have been some changes recently made in the medical management of the Harlem Hospital of New York, by the Commissioners of Public Charities and Corrections, and connived at by the faculties of two medical colleges, which every honest, fair-minded member of our profession must look upon as most reprehensible, harsh, and unjust.

"With the advent of those new officers who came in with the change in politics, in the early spring, a disgruntled member of the profession who had been expelled from the hospital service, through one of the newspapers made a savage attack on the entire medical staff of the Harlem Hospital. Shortly after this, without an intimation of any description beforehand, the commissioners—a board of laymen—gave notice of a reorganization of the Harlem Hospital staff. This staff consisted of Dr. John G. Truax, visiting physician and executive president; Dr. S. T. Armstrong, visiting physician; Dr. Thomas H. Manley and Dr. C. B. White, visiting surgeons, and Dr. A. Palmer Dudley, gynæcologist.

"As soon as the medical board came into possession of the knowledge of the proposed changes, or reorganization, they appealed to the commissioners for an explanation, who answered that they proposed to transfer the medical management of the hospital over to the three medical colleges and the ex-collegiate of Bellevue, and that if the former members were renominated by the colleges, they—the commissioners—would appoint them; at the same time the medical board being assured that there were no charges against them. Three members of the medical board were graduates from out of town; one, Dr. Truax, from Rush, of Chicago; Dr. Armstrong from St. Louis, and Dr. Dudley from Dartmouth, N. H. Dr. Manley was a graduate of the University of New York, entering the hospital service as an interne in 1875. Dr. White was a graduate of the Bellevue Hospital Medical College, entering the service through that faculty.

"It therefore would seem certain that, under the circumstances, Dr. Manley and Dr. White, who were graduates of New York colleges, would be vindicated and returned to the service. In the mean time the commissioners enlarged the hospital staff from five to eight, abolishing the gynæcologist and requiring the colleges and ex-collegiate to make each two nominations. And now comes the most despicable part played by the two medical colleges, who ignored their plain and imperative duty to defend their own alumni. Both Bellevue and the University took advantage of the opportunity to nominate four physicians, in spite of a strong protest from the County Medical Association.

"The College of Physicians and Surgeons has alone stood out, and delayed nominating until it is assured by an investigation that no injustice is to be imposed on the medical board dropped out.

"This, certainly, is a magnificent position for a faculty to take, not to be a party to and not to connive at any scheme which has for its object the imposition of a serious injustice on a body of physicians who have performed their duty with fidelity and conscientious attention, over a period of several years and without a farthing of compensation.

"It is reported that the matter is to be made the subject of a most thorough and searching investigation in the early autumn in the County and State Medical Associations of New York."

The American Dermatological Association.—The nineteenth annual meeting will be held in Montreal, Canada, on September 17th, 18th, and 19th, under the presidency of Dr. Samuel Sherwell, of Brooklyn. Besides the president's address, the programme includes the following papers: Angeiokeratoma of the Scrotum—Raynaud's Disease of the Ears—Report of Cases, by Dr. J. A. Fordyce, of New York; Two Cases of Hydroa Vacciniforme, by Dr. J. E. Graham, of Toronto; Two Cases of Bromide Eruption, by Dr. George T. Jackson, of New York; Dermatological Notes, by Dr. W. A. Hardaway, of St. Louis; The Epitrichial Layer of the Epidermis and its Relation to Ichthyosis Congenita, by Dr. J. T. Bowen, of Boston; A Remarkable Drug Eruption, by Dr. F. J. Shepherd, of Montreal; A Hitherto Undescribed Sequel of Non-parasitic Sycosis, by Dr. J. A. Cantrell, of New Orleans, and Dr. J. F. Schamberg; The Infected Scratch and its Relations to Impetigo and Ecthyma, by Dr. H. G. Klotz, of New York; A Contribution to the Study of Mycetoma, by Dr. J. N. Hyde, of Chicago; An Unusual Papulo-pustular and Fungating Bromide-of-Potassium Eruption in a Baby, by Dr. G. T. Elliot, of New York; An Ætiological Puzzle, by Dr. J. C. White, of Boston; Studies on Some Dermatological Subjects, by Dr. A. R. Robinson, of New York; A Unique Case of Agminate Folliculitis of Parasitic Origin, by Dr. M. B. Hartzell, of Philadelphia; A Note on the Antiparasitic Treatment of Eczema, by Dr. J. Zeisler, of Chicago; The Treatment of Erysipelas, based upon a Second Series of Fifty Cases, by Dr. C. W. Allen, of New York; Notes on Drug Eruptions, by Dr. J. A. Fordyce, of New York; A Further Study of Alopecia Præmatura and its Most Frequent Cause, by Dr. G. T. Elliot, of New York; The Prevalence of Germ Dermatoses, by Dr. J. C. White, of Boston; Symbiosis of Cutaneous Eruptions, by Dr. J. Zeisler, of Chicago; Sleep in its Relation to Diseases of the Skin, by Dr. L. Duncan Bulkley, of New York; Urticaria Pigmentosa—Report of a Case Twenty Years under Observation, by Dr. P. A. Morrow, of New York; and A Note on the Elastic Circular Bandage, by Dr. G. H. Fox, of New York. A paper will also be read by Dr. S. Lustgarten, of New York; there will be a general discussion on the Value and Limits of the Usefulness of Electrolysis in Dermatology; and Dr. H. W. Stelwagon, of Philadelphia, will show photographs of unusual cases.

The Index Medicus Fund.—Dr. George Thomas Jackson informs us that, in addition to the gentlemen we have before mentioned, Dr. John A. Fordyce and Dr. John S. Thacher, of New York, have subscribed to the fund for reviving the *Index Medicus.*

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Fifteen days ending August 15, 1895:*

Wasdin, Eugene, Passed Assistant Surgeon. Granted leave of absence for ten days. August 1, 1895.

Williams, L. L., Passed Assistant Surgeon. To proceed to South Atlantic Quarantine Station for temporary duty on being relieved by Assistant Surgeon E. Prochazka. August 6, 1895.

McIntosh, W. P., Passed Assistant Surgeon. Granted leave of absence for thirty days from September 1, 1895. August 5, 1895.

Magruder, G. M., Passed Assistant Surgeon. To assume command of small-pox camp, Eagle Pass, Texas. August 10, 1895.

Geddings, H. D., Passed Assistant Surgeon. Granted leave of absence for thirty days, on being relieved by Passed Assistant Surgeon L. L. Williams.

Brown, B. W., Passed Assistant Surgeon. To proceed to New London, Conn., as Inspector. August 15, 1895.

Rosenau, M. J., Passed Assistant Surgeon. To proceed to Eagle Pass, Tex., for temporary duty. August 4, 1895.

Nydegger, James A., Assistant Surgeon. To assume charge of Detention Camp, Waynesville, Ga., in addition to other duties. August 14, 1895.

Prochazka, E., Assistant Surgeon. To proceed to Charleston, S. C., for temporary duty. August 6, 1895.

Society Meetings for the Coming Week:

Tuesday, *August 27th:* Richmond Academy of Medicine and Surgery.

Wednesday, *August 28th:* Canadian Medical Association (first day, Kingston).

Thursday, *August 29th:* Canadian Medical Association (second day).

Friday, *August 30th:* Canadian Medical Association (third day).

Answers to Correspondents:

No. 438.—In this country and in Great Britain veal is generally considered to be less nutritious and less readily digestible than beef or mutton, but in continental Europe it is more esteemed. "This difference of opinion," says Yeo (*Food in Health and Disease*), "no doubt depends on the different manner in which veal is killed and prepared in Britain and on the Continent. In England it is a much paler, exsanguine, and drier meat than on the Continent. It is probably killed younger and bled too much before killing."

Births, Marriages, and Deaths.

Born.

Griffin.—In Englewood, N. J., on Sunday, July 14th, to Dr. and Mrs. Henry A. Griffin, of New York, a daughter.

Died.

Hawley.—In San Diego, Cal., on Wednesday, August 14th, Dr. Edward H. Hawley, of Chicago, in his thirty-first year.

Letters to the Editor.

A DERMOID CYST OF THE SUPERCILIARY REGION.

Pomfret, Conn., *August 12, 1895.*

To the Editor of the New York Medical Journal:

Sir: In a recent issue Dr. Wiggin reports a dermoid cyst of the superciliary region which recalls a similar case in my own practice. About a year ago I was consulted by K. H., an Irishwoman, a domestic, for a tumor over the left eye. It was beneath the left eyebrow, soft and fluctuating, but not freely movable. In May of this year she presented herself at the Day Kimball Hospital. The tumor was enlarged and was pushing the eyelid downward so as to interfere with vision. The eyebrow was carefully shaved away and an incision made through the denuded surface, and the tumor, which was firmly adherent at its base to the periosteum, was with difficulty removed. The contents were essentially the same as in Dr. Wiggin's case. The wound was irrigated with bichloride solution, sutured with silk, dusted over with aristol, and a dressing of sterilized gauze applied. The stitches were removed on the fourth day. Primary union occurred, and there is a scarcely perceptible cicatrix. S. Burden Overlock, M. D.

IRREGULAR PRACTICE IN BALTIMORE.

Baltimore, *July 30, 1895.*

To the Editor of the New York Medical Journal:

Sir: In view of a quite general misinterpretation, the medical law in the State of Maryland, which has been a statute since 1892, that no one shall pursue the practice of medicine or surgery in the State of Maryland unless a graduate of a medical school in good standing and proved qualified by an examination before the examining board, is practically dormant, as there are in the city of Baltimore many so-called doctors who never graduated from any school, never studied medicine, and never presented themselves for examination before the board, but merely went before the clerk of the court and made affidavits that they were doctors of medicine, and on these presentations and the payment of one dollar received their certificates to practise medicine and surgery, though they know very little if anything, and the health of the community is endangered by them. How deplorable it is to see men of this type—in other words, self-made doctors—propagating charlatanism under the name of medicine, and men of high repute, ignorant of the fact, consult with them!

Will the board of medical examiners, representing the Code of Public General Laws of Maryland, title "Health," sub-title Practitioners of Medicine, investigate and cut short the practice of charlatanism in the city of Baltimore, or will they allow these scoundrels to go on with it, in defiance of the law? I hope not. A Subscriber of Baltimore.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Seventeenth Annual Congress, held at Rochester, N. Y., Monday, Tuesday, and Wednesday, June 17, 18, and 19, 1895.

The President, Dr. John O. Roe, of Rochester, in the Chair.

The Treatment of Goitre and Exophthalmic Goitre by Thyreoid Extracts and Desiccated Thyreoids.—A paper on this subject was presented by Dr. E. Fletcher Ingals and Dr. Henry G. Ohls, of Chicago. (To be published.)

Dr. E. L. Shurly, of Detroit, said that he had used the ordinary extract in a few cases with rather disappointing results. In this connection he desired to relate the case of a human being from whom the thyreoid gland had been extirpated by Dr. T. A. McGraw. He would take the liberty of reporting this case here, although he had not asked Dr. McGraw's permission to do so.

Some fifteen years ago, Dr. McGraw had extirpated the whole thyreoid gland in a case of goître occurring in a boy of about sixteen years of age. This boy had resided all his life in a marshy district just outside of the city. This operation had seemed to relieve the boy for about three years, and while he did not grow in stature, he had seemed to develop quite well in other directions. At the end of three or four years thereafter the speaker had seen the boy again. At this time the voice had been very piping. He had been brought to the speaker for an examination of the larynx. The examination had shown that the movement of the vocal cords and arytænoids was normal, but that the tension was defective. From this time the boy had gradually developed into a state of myxœdema. Dr. McGraw, of course, had done all that could be done with the knowledge possessed at the time the operation was made. The boy's mental faculties have not developed to any extent. Three years ago some of the thyreoid structure had been introduced into his neck, but without special benefit so far as the speaker had learned. Since that time he had been given the thyreoid extract quite continuously. Last February he had again examined the larynx of this individual, and had found the tension of the vocal cords to be much better. The boy's mental faculties were somewhat better, although the mind still acted very sluggishly. The case was of interest, inasmuch as it pointed directly to the effect of extirpation of the thyreoid gland, and confirmed the experiments that had been made on the lower animals. He thought the profession should use its influence against extirpation of the whole of the thyreoid gland in the light of present knowledge.

Dr. W. E. Casselberry, of Chicago, said that his experience had been limited to a single case of exophthalmic goître. In this case, the fresh gland had been administered, twice a week, with the result of producing a decided improvement, although not a cure. This had occurred more than a year ago. Dr. Paul Bruns had been studying this subject for a considerable time, and his last report had included some sixty cases. His cases had been classified according to the age. In the first decade, between one and ten years of age, all of the patients had recovered under the use of the thyreoid extract; between the ages of ten and twenty years, about three fourths had recovered; later in life, the results had not been so good, so that between fifty and sixty years improvement had been observed in only a small proportion of the cases. In view of these interesting observations, he hoped that Dr. Ingals, in closing the discussion, would say something about the ages of his patients. The reader of the paper had also called attention to the fact that there were some dangers connected with the treatment. One writer had reported that a monkey that had been experimented upon had died within ten days. Some cases of apparent heart failure had also been reported as having occurred during the administration of this remedy.

Dr. Shurly remarked that monkeys that had died from natural causes very frequently showed enormous enlargement of the thymus gland.

Dr. Ingals said that he could not answer the question regarding the ages of his patients, as this point had not been specially considered in the preparation of his paper. Dr.

Taylor, of Princeton, had treated two hundred and seventeen cases of goitre in the last eight years, and had believed they were caused by the drinking water. He had stated that the cases did not do well under his treatment except where distilled water had been substituted for their ordinary drinking water.

Electrolysis by a Current Controller for the Reduction of Spurs of the Nasal Sæptum.—Dr. W. E. Casselberry, of Chicago, read a paper on this subject. (To be published.)

Dr. J. E. Newcomb, of New York, said that he had done some work in this direction. One of the most valuable features of the paper was the emphasis that it had laid upon the limitations of this process. On this side of the water it was impossible for us to credit absolutely the statements made by certain French writers, who distinctly stated that deviations and bony excrescences could be removed. There were many cases in which deviation of the sæptum was combined with a thickening, where electrolysis would remove some of the thickening, and so relieve some of the symptoms of obstruction. In his own work in this line he had employed the ordinary current from a galvanic battery, but he had demonstrated that excrescences which were almost wholly cartilaginous could be entirely removed. He had used steel needles, held together by silk threads. The oxidation of the steel needle was harmless, because the resulting salt was an iron compound, and exerted only a styptic effect. It was very important, as stated in the paper, to watch the sound nostril while the process was going on, for the first appearance of a minute bubble indicated an approach to the danger line of perforation.

Dr. William H. Daly, of Pittsburgh, said that he thought it was largely a matter of personal preference as to what one selected for the removal of spurs in the nose. He had used electrolysis considerably up to about fifteen years ago, and while he had not abandoned it entirely, he felt that with the cartilage knife, saw, and trephine at our command it was like a waste of time to resort to electrolysis—indeed, he believed that electrolysis was more a theory than a fact, and in the treatment of spurs and bony protuberances in the nose, where he had succeeded, it had not been due to true electrolysis, but to a condition akin to a mild cautery action. If this be admitted, then why subject the patient to the danger of inflammation of the middle ear, to traumatic septicæmia, and to prolonged discomfort, when by a slight application of cocaine, followed by the employment of a sharp knife or saw or trephine, the spur could be quickly and easily removed? Those who, like himself, had been specialists in this department for many years were inclined to throw aside many of the frivolous and toylike appliances, and to rely more and more upon simple common-sense and efficient methods. The instrument just presented was certainly a beautiful one, but he did not think it would answer in his city, where the street current was not a continuous but an alternating one. Nor could he see any superiority of this instrument over an ordinary galvanic battery and current controller. He had got into great trouble on one or two occasions from the use of a milliampèremeter, an instrument that he did not now trust any more than he would a gas or water meter. One's sensations were certainly more reliable in practice, until electricians could make a more accurate instrument than the milliampèremeter furnished us at present.

Dr. Shurly said that he could not see the sense of resorting to electrolysis of bony tissues; it seemed to him about as sensible to attempt to amputate a thigh by cauterization as to remove these spurs by electrolysis, when it could be so much more easily and quickly done with the knife or saw.

Dr. Jonathan Wright, of Brooklyn, said that he had had a slight experience with electrolysis, and it had proved very unsatisfactory. Occasionally, however, there were cases where it seemed desirable to avoid a cutting operation. Recently a woman, eighty years of age, had applied to him for the removal of a nasal spur. In such a patient it seemed to him that some such method as that suggested in the paper would be preferable to a cutting operation. The only possible drawback was that there were likely to be foci of bone in these spurs in persons of advanced age. For certain special cases, therefore, where the surgeon wished to avoid shock, this method by electrolysis was useful. During the past spring he had seen a case in which the element of shock had proved quite important. It had been a case of extensive deviation and adhesion to the inferior turbinated bone, in which it had been necessary to perform three operations. The patient had been a rather stolid boy of sixteen years. He had done well up to the third operation, and then had suddenly begun to grow pale and to lose flesh, and at the same time he had begun to pass a large quantity of saccharine urine. This case was mentioned to show that these intranasal operations sometimes caused a good deal of shock. The most vital objection to the electrolytic method was its inability to cope with bony spurs—the variety most difficult to treat by any method.

Dr. Ingals said that he had had no experience with electrolysis for this purpose, but that in some cases of cartilaginous obstruction it could be removed by the galvano-cautery in one tenth the time that would be needed for the electrolytic needles. A galvano-cautery electrode with a small point, half an inch long, could be brought to a white heat and passed directly into the cartilage. This would cause absorption or destruction of the projection with no more discomfort than that from an ordinary cauterization. There were few if any cases where simply puncture with the galvano-cautery was not quite as efficient as the operation with electrolytic needles, and the operation was much less painful and infinitely shorter.

Dr. J. H. Lowman, of Cleveland, said that the general opinion seemed to be that electrolysis could effect no resolution of bony spurs. Those in whom he placed the most confidence had certainly dispensed with this method entirely for the removal of bone and only resorted to it as indicated in the paper.

Dr. S. H. Chapman, of New Haven, said that if any portion of the head was introduced into the electric circuit, unless the current began at zero and was increased very gradually, a certain shock would be produced. This, no doubt, explained the sense of faintness of which the reader of the paper had spoken. The instrument exhibited did not admit of such fine gradations of the current as were required if one would avoid this shock, and to that extent it was defective. An instrument made by Vedder, of New York, was admirable in this respect. The principle upon which it acted was a variation in the current produced by pressure upon pulverized charcoal. He had used this controller a great deal in treatments about the head and without causing any faintness.

Dr. A. B. Thrasher, of Cincinnati, said that he wished to express his appreciation of the paper, and also to ask if the bipolar method produced as much pain as the monopolar method. He had used only the latter, and, although not on spurs, he could hardly conceive of its being less painful than the operation with the knife. Of course, there were certain patients who would not consent to the use of the knife, and yet who would permit the use of another method, even though it were just as painful.

Dr. J. W. Farlow, of Boston, asked if there had been any instances of severe hæmorrhage following this method of treatment. He had observed severe hæmorrhage in one or two cases in which he had used the saw in patients who could by no means be called "bleeders." In case it was important to operate further in these cases, would electrolysis be sufficiently trustworthy?

Dr. Daly said that he had recently used in cases of operation, where there had been hæmorrhage in the nares, a splint of aluminum folded upon itself. The splint was covered with absorbent cotton; the latter, wrapped with fine thread, was first cleansed, then soaked in an antiseptic solution, preferably a mixture of oil of eucalyptus, tar, and compound tincture of benzoin, and then introduced into the nose upon aluminum slides.

Dr. Casselberry said that the object of his paper had been to determine the scope and limitations of the treatment. He had found that bony spurs could not be removed, that spurs composed of a mixture of bone and cartilage could be reduced, and that spurs consisting entirely of cartilage could be completely removed. He had stated that the electrolytic method was not applicable to all cases, the ordinary surgical method being preferable for many. He wished to take exception to the statement made by Dr. Daly that the surgical method was "safe." Some years ago he had had a case of cartilaginous spur, which he had removed by the knife, and in which there had been a most persistent and profuse hæmorrhage for three days in spite of careful packing. The patient had subsequently developed an inflammation of the ear. He had knowledge of similar cases from which it was evident that the surgical method could not be truthfully described as "safe." The danger of hæmorrhage was much lessened by the more recent method of antiseptic packing with iodoform gauze immediately after the operation, but patients would often object to this treatment, especially if the operation was done for a comparatively trifling spur.

No answer would seem necessary to the statement that "electrolysis was a myth," that "when effective it was by cauterization," for true electrolysis was wholly distinct from cauterization, although it was possible by carelessness or inattention to so heat the electrolytic needles that they would cauterize. If one used only his "own body" as a milliampèremeter such an effect might easily ensue for want of sufficient delicacy in regulating the current.

In removing cartilaginous spurs by the real galvano-cautery he had not had such good results as Dr. Ingals had. There had been much more inflammatory reaction after cauterization than after electrolysis, and the patients had often complained bitterly of the soreness produced. There could be no question about the efficiency of the cauterization treatment. The cost of the current controller that he had exhibited was not more than that of a good primary continuous-current battery. The objection raised that the instrument was not sufficiently delicate was a very practical one, but it could probably be remedied by placing in the circuit an additional rheostat. He had not as yet referred to the safety of the apparatus when used with the one-hundred-and-ten-volt street current. It was supplied with a fuse designed to melt if the current should accidentally reach a dangerous strength. He had not employed the unipolar method, and hence could not speak of the relative advantages of the unipolar and bipolar methods. It seemed to him more reasonable to employ the bipolar method, as the current was confined to the immediate neighborhood of the two needles inserted into the spur. By the bipolar method less ampèrage was required, and the operation was shorter and should be less painful.

(*To be continued.*)

THE BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.

Seventh Annual Meeting, held in London on Thursday and Friday, July 25 and 26, 1895.

[Dr. J. W. Gleitsmann, of New York, to whom we are indebted for a copy of the secretary's notes, writes as follows: "I can not help expressing feelings of the highest appreciation and the sincerest gratitude for the unbounded hospitality and the universal kindness shown to all the foreign guests, and especially to Americans. New ties of friendship have been formed, old ones have been strengthened, and I hope that we may be able to reciprocate at some future time when visited by our English friends in our own home."]

The Surgical Treatment of Suppuration of the Accessory Cavities of the Nose.—Dr. John N. Mackenzie, of Baltimore, after enumerating the various operative procedures applied to empyema of the maxillary sinus, expressed himself in accord with Freeman, who opens below the nasal duct. He did not approve of the intranasal methods, which required removal of the inferior turbinate. In general the oral operation was required in all but recent cases. He believed that dental caries was the most frequent cause of antral disease. He also dwelt upon the bacteriological question; he said he agreed with those who considered the oral bacteria less virulent than the nasal.

Dr. Luc, of Paris, devoted the greater part of his communication to the description of an operation first proposed by him for the treatment of frontal empyema. It consisted, after opening wide the anterior wall of the sinus at the union of the eyebrow with the bridge of the nose, in curetting away the granulations contained in the cavity, and in destroying the greater part of the floor of the sinus by means of a chisel, in order to create a large communication between the sinus and the nasal fossæ. A curved probe was then introduced from the wound into the nose until it appeared at the nostril, when a large rubber drain was fixed to its end and drawn from below upward into the sinus, where it was deeply lodged. The wound was then sutured and antiseptic injections were given through the drain during the following days. The drain might be removed after a fortnight in acute cases, after a month in chronic cases complicated with fungosities. Scarring was minimized.

Dr. Luc reported four cases of operation for empyema of the frontal sinus, the two last according to the above-described method, and explained how he had progressively been induced to modify his surgical procedure and to adopt definitively the operation described.

Dr. D. Bryson Delavan, of New York, confined his remarks chiefly to ethmoidal disease, and urged the necessity of conservatism in nasal surgery. In some cases operative measures were absolutely required, as was proved by the failure of other means and by the comparative results. The treatment should be based upon indications suggested by the anatomical and pathological conditions present. It should consist in thorough drainage of the several cavities of the sinus, persistent cleansing and disinfection of its interior, and the removal of offending tissues, which he did with a series of fine and variously curved curettes, which he showed to the meeting.

Dr. F. H. Bosworth, of New York, dwelt on the more frequent implication of the ethmoid cells. He used an electromotor and a burr three sixteenths of an inch in diameter in these cases, taking several sittings, up to fifteen, to destroy all partitions, and had observed no ill effects.

Mr. Mayo Gullier described his operation for empyema of the frontal sinus. The incision was vertical and in the middle line, to enable him to explore both cavities.

Dr. W. H. Daly, of Pittsburgh, after reviewing the various procedures, expressed his favorable opinion of mercury bichloride as an antiseptic, and also advocated packing the antrum with sterilized gauze soaked in eucalyptus oil, oil of tar, and belladonna, equal parts.

Dr. Dundas Grant had used Krause's method with success for the antrum of Highmore. He advocated the use of Hartmann's cannula to wash out the sphenoid and other sinuses.

Dr. Daly and Dr. Collier questioned the possibility of entering the sphenoidal sinus; this was, however, supported by Dr. Krause.

Laryngeal Stenoses.—In a paper on this subject, Dr. C. E. Sajous, of Paris, said that the infraglottic space had not received the attention its importance as an inherent portion of the larynx warranted. As a consequence, the part it played in connection with the diseases of that organ was still insufficiently appreciated, and the disorders to which it was itself liable had not as yet been clearly differentiated. All examinations of the larynx should include the infraglottic space. The forms of stenosis peculiar to the lower infraglottic region presented features of unusual danger and symptoms likely to be ascribed to disorders in which iodide of potassium was usually administered. Iodide of potassium, since it greatly increased the dangers of infraglottic stenosis, should not be administered in a case presenting dyspnœa as a symptom, unless the non-existence of stenosis was ascertained by infralaryngoscopic examination or the causative disease was clearly recognized as independent of the respiratory tract. Preliminary tracheotomy should be performed when iodide of potassium was to be administered during the existence of advanced infraglottic stenosis.

The treatment of laryngeal disorders involving the glottis was more effective when the infraglottic region was considered as a part of the diseased area.

Dr. Sajous also read a paper sent by Dr. Massei, of Naples. A distinction, said the author, must be drawn between laryngeal stenoses proper and infraglottic stenoses; this was especially necessary from their similarity of symptoms. The hypoglottic tract was the most frequent seat of syphilis, tuberculosis, growths, rhinoscleroma, and also foreign bodies. Slighter laryngeal stenoses were frequently curable without local treatment, such as syphilitic affections, for which the use of corrosive-sublimate injections, with or without iodine, was the best treatment. In simple inflammatory or neoplastic stenoses intubation offered the best result. Too great confidence was placed in general antisyphilitic treatment in severe stenoses, and this might be fatal. Syphilitic perichondritis yielded only when general treatment was aided by surgery. Swelling in the cricoid region and ankylosis of the arytænoids did not usually improve much. Gummatous chorditis frequently required surgical aid. If syphilitic stenoses were treated generally they required careful supervision. Intubation was better than tracheotomy, and it might be used as a temporary expedient in hopeless cases.

The Antitoxine Treatment of Diphtheria.—Dr. Woodhead, who opened a discussion of this subject, limited himself to his own experience gained from two thousand cases during the last seven months. In cases of undoubted diphtheria the long form of bacillus had almost invariably been present, as well as wedge-shaped and irregular forms. Where there was a distinct membrane, with congestion of the parts, the long forms were invariably present, but there were a few exceptions, streptococci existing in undoubted cases of diphtheria. In convalescent patients the short form predominates. Owing to incompleteness of the testing of the activity of the various forms upon animals, no definite statement could yet be made as to their actual rôle in the formation of membrane, but cases of diphtheria might be divided into those in which the power of forming toxic products was present and those in which it was absent. The long form of bacillus had more power in this direction than the short and irregular ones. The toxine of the long form was much the more virulent, and the author explained how the toxine increased in virulence in passing through a series of animals, and showed that we ought to be able to trace the gradual rise of an epidemic. There was a great difference in the susceptibility of horses. The importance of an early diagnosis was very great. Only twenty or twenty-five per cent. of cases admitted of an immediate diagnosis, but it was possible to determine within twenty-four hours whether a patient had diphtheria, and the disease was much better treated when the diagnosis was made early. In mixed infection the serum was not so useful as in pure diphtheria. Ruault considered the disease more virulent in such cases. The antitoxine could not be expected to cure all cases—for instance, those in which the toxic products of the diphtheria bacillus had been acting for any length of time on the nerves and the heart muscle. We could antagonize the action of the diphtheria toxine in the body, and if this was done at an early stage there was every prospect of effecting a cure. As to prophylaxis, Dr. Woodhead believed we should soon have some most important facts concerning the prophylactic power of the serum laid before us by American physicians. The action of the serum was certainly harmless in fairly large doses, and he was quite satisfied that it was possible to diminish the mortality and bring down the actual number of persons attacked by protecting children who had not contracted the disease.

The Surgical Treatment of Laryngeal Tuberculosis.—Dr. H. Krause, of Berlin, in a paper on this subject, said that in all cases where tubercular ulcerations were complicated with advanced infiltration or granulation surgical treatment was necessary. Simple ulcerations or those surrounded with only slight infiltration were best treated with lactic acid. High fever and weakness formed no absolute contraindication to the operation, because even in such difficult cases relief was often obtained, sometimes even the removal of dysphagia or difficulty of respiration. In several observed cases the laryngeal troubles had disappeared entirely after the operation and not returned up to the time of death, which had been caused by the pulmonary affection. The cure of the larynx might last while the pulmonary process advanced and caused death. Relapses happened, but since the introduction of surgical treatment more rarely in the larynx than in the lungs.

Dr. J. W. Gleitsmann, of New York, said that there was no doubt that curettement of the larynx for this disease was not yet frequent in the United States, either on account of the surgeon wishing to avoid all harsh measures or on account of the acknowledged small percentage of cures. He wished to urge the necessity of the proper selection of cases for this treatment, and the necessity that further reports of all methods of treatment be obtained. Curettement of the larynx was not supposed to cure the pulmonary disease or to prevent relapses, but by it we improved the laryngeal lesion and thereby increased the chances of cure of the pulmonary disease. It was certainly the quickest and surest way of curing dysphagia; the chief importance of removing this symptom was on account of the improvement in nutrition sure to follow.

The limitation to suitable cases was no reason against curettement, though relapses doubtless occurred in proportion to the inaccessibility of the part and the difficulty of the operation. The speaker gave an analysis of twelve cases treated by himself. Three patients had died, five were in *statu quo ante*, and in four no recurrence had taken place in from six to ten months. Reference was made to Dr. Chappell's creosote treatment.

Dr. Theodor Heryng, of Warsaw, said that tubercle of the larynx might heal spontaneously, chiefly in cases of ulceration of the vocal cords and the posterior wall; very rarely in the more serious cases. The chief indications in general treatment were hygienic, dietetic, and climatic. The most important indications were the removal of dysphagia and the relief of dyspnœa and aphonia. The cure of deep ulcers was best effected by surgical means. He then dwelt upon the indications for surgical treatment.

Reports on the Progress of Medicine.

SANITARY SCIENCE AND PRACTICAL HYGIENE.

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Bicycling.—The merits and also the harmful tendencies of bicycle-riding as an exercise have induced much discussion among medical observers, many of whom are familiar with this fascinating exercise. While numerous English and American journals have published articles and reports embodying very varying opinions, the French have taken up the subject even more earnestly and energetically. There appear to be more utterances in favor of bicycle exercise than against it, although strong advocates, such as Hammond (*Med. Record*, February 2, 1895, p. 129), insist that improper or immoderate use of the "wheel" is dangerous. Rockwell, discussing Hammond's excellent article, declares that indiscriminate bicycle-riding causes more harm than any other exercise. Yet he is an ardent advocate of bicycling. Hammond examined fourteen professional bicyclists who rode with the body arched forward and failed to find any resultant spinal deformity.

For both sexes, the use of the bicycle is contraindicated whenever disease of the genito-urinary organs exists. Some gynæcologists, however, advise bicycling for the relief of dysmenorrhœa, yet almost all are agreed that women ought not to use the "wheel" during menstruation or pregnancy. In neither sex should pressure come upon the perineal region. The saddle should be flat and broad enough to allow the weight to rest upon the buttocks. Hygienically speaking, the saddle is by far the most important part to be considered in choosing a bicycle, and should be rather taut and well forward. The front ought not to be sharp, pointed, or raised. Those who advocate this exercise for women regard corsets as an impediment to its healthful use. Dickinson advises "union undergarments" for women bicyclists (*Am. Jour. of Obstetrics*, January, 1895). Douglas Hogg (*Jour. de méd. de Paris*, September 16, 1894, p. 449, and *Revue d'hygiène*, November 20, 1894) has collated the opinion of forty-eight eminent gynæcologists, of whom one fourth disapprove of this exercise. Mr. Lawson Tait, among others, cites instances of harm resulting to the genital organs of women because of the use of the "wheel."

Lack of moderation is the chief danger. As Herschel (*Lancet*, March 2, 1895, p. 540) expresses it, the cyclist runs the risk of taking more exercise than is realized at the time. He calls attention to the fact that machines are geared too high. For boys especially a fifty-six-inch gear is better than a sixty-three-inch. Overtaxing the forces is to be guarded against. The too common penalty is heart disease of varying seriousness. One should stop riding as soon as fatigued or whenever shortness of breath begins, or when there is the slightest uneasiness in the chest. The upright posture is more healthful than the bent over attitude, although some think the harm from this and from heart overwork is exaggerated. While walking is a superior exercise, bicycling is more attractive to the majority. People should be taught to avoid excess and cultivate only good postures upon carefully chosen and comfortable saddles.

Corsets, of the usual sort, are considered "murderous instruments that produce many infirmities of women," according to Mme. Gaches-Sarrente (*Revue d'hygiène*, etc., May 20, 1895, p. 399). They do not even support the clothes well. A proper skirt-supporter ought not to constrict the waist or depress forcibly the abdominal organs, but should support all parts evenly, including the lower portion of the belly. A good breast-supporter held by the shoulders is more effective than any corset, and the latter has the great drawback of constraining the thoracic cage and hence restricting the dilatation of the lungs, especially at their bases. The digestive organs are likewise oppressed. The stomach is pushed downward in its lower part, and becomes wearied from lack of the natural support given by the abdominal wall when in its natural position. The organ dilates and is deformed, the two orifices are compressed, and physiological movements and processes are restricted. Finally, nutrition suffers. Torpor, constipation, flatulency, protrusion of the belly, and depression of the uterus result. The kidneys, especially the right one, are displaced, twisted, and depressed. The figure resulting from the use of corsets is æsthetically objectionable.

A really good corset is useful. It must not rise too high, for fear of depriving the stomach of a free place in the epigastrium. Its superior border should be somewhat lax, so as to permit the free movement of the ribs. Behind, it should follow the curvature of the figure at the waist so as not to hinder the body from straightening. In front, it must not have any contracted part at the epigastric level, for it must not divide (as it were) the abdominal cavity and displace viscera. It should reach to the pubes and adjust itself so closely to the abdominal wall as to supply the place of a belt, and thus offer to the abdominal viscera a sufficient point of support whether the wearer is in repose or exercising violently. The fewer whalebones, the better.

Sewer Air is not a Demonstrable Source of Disease.—Parkes (*Jour. of the Sanitary Inst.*, April, 1895, p. 143) reviews the Report on Sewer Air Investigations and on Sewage, by Laws and Andrewes. The micro-organisms in the sewer air are only such as occur in the air of the streets, and are in no wise related to the microbes of the sewage. Molds and micrococci are the forms almost exclusively present in sewer air, while the sewage contains chiefly bacilli. It is very improbable that sewage bacteria become disseminated in the sewer air unless the sewage is violently splashed about. Even the *Bacillus coli communis*, exceedingly abundant in sewage, has never been found in sewer air, which, too, contains practically no liquefying organisms. Yet a great proportion of the bacteria of sewage liquefy nutrient gelatin very rapidly. The only danger is some indirect and vague one, the term "sewer gas" being a bugbear utilized by ignorant and pretentious people.

Rheumatic Fever and its Epidemiological Relations have been carefully studied by Newsholme (*Lancet*, March 9 and 16, 1895; also *Brit. Med. Jour.*, same dates). The deductions of this expert statistician are very interesting as being in part opposed to the prevalent theories. He shows that dampness does not cause or favor rheumatic fever, although causing so-called "chronic rheumatism." Muscular rheumatism is probably closely related to acute rheumatism, which is a specific infectious disease, not so much due to heredity as is supposed, and probably not produced by the influence of a meat diet. In the years when it is epidemically prevalent the ground water is low and exceptional scarcity of rainfall prevails. A dry soil appears to favor it, and it would seem that the conditions of soil producing malaria are exactly opposite to those favoring rheumatic fever.

The London Streets and Building Act came into force on January 1, 1895. According to the *Am. Architect and Building News*, December 8, 1894, the act requires that no building front shall be higher than the street is wide, except that when the street is more than fifty feet wide the front wall of a building may have a height of eighty feet. No part of a building, except chimneys, dormers, gables, etc., can be carried above the limit defined by an imaginary line drawn at an angle of sixty-three and a half degrees from a point in the lowest part of the back fence of the open space in the rear of each building.

A court into which windows of rooms open, or one where the distance from the eaves on the top of the parapet to the ceiling of the ground story exceeds the measurement of its length or its breath, must have adequate provision made for ventilating such court by means of communication with the outer air at the ground level.

No habitable room not having a window opening directly into the external air (otherwise than into a court inclosed on every side) is allowed unless the court measures, from the window to the opposite side, a distance equal to half its height.

The doors of churches and other public edifices are required to open outward.

The Alum Process of Sterilizing (?) Water, according to Teich (ref. in *Hyg. Rundschau*, May, 1895, p. 62), almost always diminishes the number of germs. Yet this is only temporary, for an increase soon results. Typhoid bacteria are not harmed by the process, which must not be relied upon to effect their certain removal from the water. Although alum can destroy cholera bacilli in time, the process is a slow one, lasting more than a day. Hence this (Babes) process is practically worthless.

Soap a Valuable Disinfectant.—Jolles, in the *Zeitschr. f. Hygiene*, etc., xix, i, 130, 1895, has experimented with soap having 0·041 per cent. of free alkali. Solutions of from one to ten per cent. were prepared with distilled water and sterilized. Germs of cholera and typhoid fever, as also the *Bacillus coli communis*, were tested by him. In thirty minutes an eight-per-cent. solution completely destroyed the *Bacillus coli communis*. A six-per-cent. solution achieves the same result in an hour, while with half this strength of soap six hours are needed. A one-per-cent. solution used for six hours nearly effects the sterilization, although it is not wholly effective even after one day. With typhoid bacilli the process is twice as rapid. In twelve hours, a one-per-cent. soap solution destroys all typhoid bacilli. A six-per-cent. solution does the same in fifteen minutes. For a three-per-cent. solution to accomplish the same, two hours are required.

The Disinfection of fæces and the comparative value of various chemicals used for that purpose have been studied by Vincent (*Ann. de l'Institut Pasteur*, January, 1895), whose practical tests show that considerably larger proportions are needed than is ordinarily assumed. Of carbolic acid, one per cent. destroys most saprophytes. But in order to kill the *Bacillus coli communis* it must be many times stronger, and hence too expensive. Zinc chloride is a good deodorizer, but a poor sterilizer. Vincent considers copper sulphate and cresyl the best, lysol being also good, but for the fact that it does not deodorize so well as cresyl. Chlorinated lime seems inferior to copper sulphate, and even to soda or potash. As is well known, warmth increases the efficacy of all these chemicals.

The addition of one per cent. of copper sulphate, with the same proportion of sulphuric acid, added to typhoid stools kept at a temperature of 60° F., will destroy all the harmful germs within an hour. With cholera, still less time is needed. When the contents of vaults become alkaline and putrefied, they are more difficult to disinfect. In such cases the addition of mineral acids to neutralize renders the above indicated mineral salts more effective. One per cent. of sulphuric acid being added to the vault mass does not of itself sterilize permanently, but enables us to accomplish as much disinfection with from five to six grammes of copper sulphate to each litre of fæcal vault contents as eight grammes and a half would effect without the added acid.

The Microscope is used for Counting Bacterial Colonies upon gelatin plates when the colonies are at all numerous. Neisser (*Zeitschrift f. Hygiene*, xx, 119) considers it more reliable than macroscopic methods usually employed unless the number of colonies is less than six hundred. Even then, if several cubic centimetres, instead of the usual smaller amount, are incorporated into the plated gelatin, and then the microscope employed for the enumeration, the tendency to error is considerably lessened. Petri dishes, with level, smooth bottoms, are advisable; and the microscope should have a large, rotating stand plate such as is found on the best Zeiss stands. A good coarse adjustment is needed, the objective should have a large field of vision, the eyepiece should be strong and contain a micrometer made in the usual way of a glass plate having twenty-five squares ruled within the large square on its centre. The Abbé condenser is removed for the counting process.

Thermophilic Bacteria.—Macfadyen and Blaxall (*Jour. of Path. and Bacteriology*, November, 1894, p. 87) have found twenty or more varieties of heat-resisting bacilli in water, mud, garden soil, street dust, fæcal matter from human beings and various animals, sewage, and other filth. These micro-organisms thrive on agar, potato, and other ordinary culture media kept at a temperature of 55° C. to 65° C. Hardly any of them would grow below 50° C., and four kinds would not grow at a temperature below 60° C. (140° F.). Boiling for ten minutes did not destroy these. They actively decompose proteids, producing H_2S "and a most repulsive smell." They can probably cause also a fermentation of cellulose. Most of these heat-resisting bacteria grow only in the presence of oxygen; but a few are feebly anaerobic. Like the bacilli studied by Globig, these are probably not in any way disease-producers. [Fortunately, the germs of infectious disease are very sensitive to heat. Zinsser has found (*Archiv f. Dermatologie*, etc., xxix, 13) that the parasites of favus are destroyed and the disease is cured by the external application of Leiter coils kept at from 52° to 55° C. for twelve hours a day. Cholera germs perish at a temperature a little above that, while the bacilli of typhoid fever, diphtheria, and tuberculosis and the bacteria of suppuration do not resist even momentary boiling.]

Lydia Rabinowitch (*Ztsch. f. Hygiene*, etc., xx, 155), citing these and other studies, including Globig's work, studied the same question and found eight kinds of bacilli growing at temperatures between 60° and 70° C. (140° to 158° F.). They differed in coloration of growth, and when grown in bouillon cultures at 62° C. some kinds produced acid, some alkali. They hardly grew at temperatures above 75° C. (167° F.). They resisted prolonged boiling and remained alive even after five or six hours of exposure to streaming steam or after months of dry heat, as on the top of an oven. These highly resistant bacteria seem free from disease-producing qualities if one may judge by the results of experiments upon mice and pigeons. While found in milk, in various other food products, in the excrement of various animals, and in earth from different sources, these bacilli were most abundant in barley that was in the middle stage of the germinative process.

Bacteria not Destroyed by High Pressure of the Fluid in which they Exist and Grow.—Roger (*Archives de physiologie*, January, 1895, p. 12) discusses the question and gives the result of some experiments which agree, in the main, with those of other observers. Yeast, algæ, protozoa, mollusks, and leeches survive after an air pressure of six hundred atmospheres, or much more in some cases. Bacteria have been shown to be considerably affected, or even changed completely, by oxygen or CO_2 in which they were under a pressure of from eight to fifty atmospheres. Eventually, they perish under such conditions. There is among microbes always much difference in sensitiveness to the action of compressed gases and fluids. Numerous varieties, including the *Bacterium coli commune* and the pus cocci, withstand repeated shocks of two hundred and fifty kilogrammes pressure and also a steady pressure of from two thousand to three thousand kilogrammes, which is from three to five times as great a pressure as exists at the greatest depths of the ocean.

Typhoid Bacilli and their recognition are discussed by Lösener (*Arb. aus d. kais. Gesundheitsamte*, 1895, xi, ii, p. 207). The very discordant views of the numerous investigators are critically compared, and a remarkably complete bibliography of six hundred and eighty-nine references is given. The usual points of difference seem fallacious guides. For the potato test, as for the others, identical conditions of comparison must be observed. In spite of Dubief's opposite view, it is generally believed that a milk-coagulating bacillus can not be typhoid. The puncture-culture method, using a two-per-cent. grape-sugar agar, as employed by Kruse, and also Germano and Maurea, is considered by Lösener to be preferable to the fermentation tube as used by Theodore Smith for testing a given species. If gas bubbles are produced in and split the glucose-agar kept at 37° C. for twenty-four hours, even if no growth, or hardly any, is visible on the surface in that time, the culture is not one of typhoid bacilli. Indol is not produced by typhoid bacilli growing in albuminous media. The characteristic surface growth on gelatin is of value as a distinguishing point. The bacilli, although very variable in form, are very mobile and have numerous cilia on every side. No single one of all these criteria amounts to much by itself, although all taken together aid us considerably in the distinction; yet some very competent bacteriologists insist that a positive statement that we have the causative germ of typhoid before us in a given case is unreliable.

Cholera Germs: their Vitality in Bowel Discharges.—In the *Ctrlbl. f. Bakt.*, etc., 1895, pp. 77, 118, and 177, Abel and Claussen, as also Karlinski, report the result of their practical tests of the question. Twenty previous articles on this important subject are noted. Some workers have found that cholera vibrios, when mingled with the contents of a privy vault, succumb within one day; while Gärtner and others found them alive in a mixture of fæces and peat that had lain for six weeks. Very much seems to depend on the nature of the bacteria with which the cholera germs come in contact. In the typical "rice-water" stools they remain alive longer than in the more normal fæces in which the *Bacillus coli communis* and other common bacteria abound. Cold does not destroy the vibrios, and may even prolong their existence (Uffelmann). The history of epidemics has made it seem probable that these causative microbes of cholera may remain alive even for months in fæces.

Abel and Claussen have determined, however, that it is quite exceptional for these germs to remain alive in fæces for more than thirty days, and they perish there usually within three weeks. Indeed, they often endure for less than three days. Hence, fæces should be examined promptly if at all. In many cases it is advantageous to supplement the usual peptone-water method (when that does not give positive results) by taking from ten to twenty cubic centimetres of the fæces and pouring upon the mass from five to ten times its bulk of peptone-water. This is kept at a room temperature of from 13° C. to 16° C. From it tubes of peptone-water are sowed and then treated in the usual way. Yet this accessory method may fail where the usual process succeeds.

Karlinski, whose standing and great practical experience in eastern Europe, Turkey, and Arabia allowed him exceptional opportunity for the study of the question, found the cholera germs alive in fæces for more than five weeks. In one case they lived there for fifty-two days. He ascertained also that in all probability clothes soiled with cholera germs and kept in the interior of a chest, as on a sea voyage, might under moist atmospheric conditions have these harmful micro-organisms remain alive there for seven months! Yet if infected fabrics are not shut up till after being well dried in diffused daylight, the vitality of dried cholera germs could not then exceed thirty-six days.

The official report on Cholera in Hamburg (*Arbeiten aus dem kais. Gesundheitsamte*, x, i, p. 159) speaks of these germs (vibrios) remaining alive for more than a hundred days in the bowel contents of a woman who had died of the disease. In sea water these harmful microbes remained alive for from three to sixteen days, or even twenty-five days.

The same report (*Arb. aus d. Gesundheitsamte*, x, i and ii; xi, i) shows that the virulence of the infective germs is not necessarily lessened with the lapse of time after the beginning of the epidemic. It has been demonstrated that cholera germs may be carried in the bowel of a seemingly healthy person. These harmful microbes may, too, pass through the alimentary canal of a healthy, unaffected person and yet cause cholera in the next person or in others. In one and the same epidemic the same person may be attacked several times, these being recrudescences in many cases. There was no evidence that supported in any way the localistic theory. Most cases were among boat people, those who came in contact with them, and persons who were heedless about drinking bad water. Thus the excessive proportion of seven per cent. of the workmen in the gas-works died of cholera! They required much drinking water because of the heated atmosphere about them, and slaked their thirst with the ordinary (infected) supply. On the other hand, the brewers, using artesian well water and drinking much beer, had less than one seventieth as large a proportion of cases. Not one of the four hundred physicians in Hamburg acquired the disease, and only one of those foreign medical visitors who came to help. And yet all were very devoted. Only six out of the eight hundred attendants on the patients at the general hospital acquired cholera. People in bad health, and especially "alcoholics," showed particular liability to the infection.

All the cases show that cholera can be prevented by attention to proper precautions. The prompt locating of the first cases in a place, the isolation of the sick, and an intelligent and suitable disinfection have been demonstrated to be effective means for stamping out cholera. Land quarantine and restriction of intercourse accomplish very little. The prime importance of cleanliness and pure water deserves emphatic repetition.

Cold and Cholera Bacteria.—Koch stated that cholera bacteria could not develop under 16° C. But later observers disprove this by demonstrating their growth at 8° C. Various experimenters have found that these germs withstand for more than a month temperatures from 15° to 32·5° C. below the freezing point. Kasansky (*Ctrlbl. f. Bakt.*, etc., February, 1895, p. 184) found that they resisted cold of 31·8° C. below freezing. One culture remained frozen for twenty days and yet survived. They withstand alternate freezing and thawing, even though the process is repeated a dozen times. Hence they may survive an entire severe winter.

Oleomargarine has recently been investigated by Jolles and Winkler from a bacteriological standpoint (*Zeitschrift f. Hygiene*, xx, 60). The best is made from carefully prepared, selected fat. This is exposed to a temperature of 113° F. in the process of manufacture. Artificial butter is made by adding to the thin, fluid fat produced one fourth each of water and of milk, some milk gland and salad oil, then working up the whole. The entire process, from the veterinary inspection and approval of the carcasses to the choice of the milk, water, and other ingredients, ought to be done with the utmost hygienic precaution. Then such artificial butter is not only equal to good, genuine butter in nutritive value, but is superior in being much less liable to become rancid and in having far fewer bacteria. The bacteria present are chiefly of varieties that are common in air and water. Although carefully sought for, tubercle bacilli and other disease germs were never found. Four peculiar species of bacteria were isolated from artificial butter, and two from the fluid fat used.

Fresh Milk has no Bacteria-destroying Power, says Basenau (*Arch. f. Hyg.*, May, 1895, xxiii, i, pp. 44 to 86), as the summary of careful experiments made under Forster's guidance. An extensive bibliography is given, and a direct denial is made of the partially accepted doctrine that fresh, bacteria-free cow's milk has any bactericidal efficacy. Guinea-pigs, a goat, and a cow were used also to test the possibility of pus cocci and the *Bacillus bovis morbificans* going over into the milk secreted from a mammary gland whose vessel walls were healthy. They apparently do not, even though contained in the bodily fluids, provided no severe disease symptoms follow the inoculation.

Basenau found that the *Bacillus bovis morbificans* was demonstrable in considerable numbers in the blood of the goat and the cow within a day after being peritoneally injected, and within an hour in guinea-pigs. These micro-organisms appeared in the milk considerably later than in the blood, and only after severe disease symptoms. The quantities of these harmful bacteria at a given time were greater in the milk than in the same volume of the blood. The nearer the death of the animal, the greater the number of the excreted bacteria. The milk gland is not to be regarded as an organ that the body uses as a means of defense to separate and remove disease-producing germs as rapidly as possible. Both meat and milk should be cooked for at least half an hour at a temperature of from 60° to 68° C. unless of absolutely pure origin.

Sterilized Milk and its value as a food for babes and invalids is practically considered by Blasius and Beckurts (*Deutsche Vtljhrschr. f. öff. Gsdhtspfl.*, xxvii, 1895, p. 527). Observations and tests of that produced by a large dairy in Brunswick show excellent results from feeding with sterilized milk. It is so well prepared as to be of constant and even quality, and no fat (of notable amount) is separated from the emulsion. It is furnished at the very low price of ten pfennigs (two cents and a half) for a one-third-litre bottle. Being completely sterilized, it keeps for several weeks at least. Accidents in preparation (including imperfect cleaning of the bottles and apparatus) cause only a small fraction of one per cent. of the filled bottles to spoil. These results show that the purveying of such excellent milk may safely be left to large establishments, which are adapted to taking care more constantly and thoroughly than most individuals can. Although the Soxhlet method of individual preparation is excellent, this dairy purveying is preferable for the masses, especially as the milk procured by poor people would otherwise be apt to be anything but good or easily sterilized.

At this well-managed dairy Flaack's process of sterilization is used under chemical and biological control. The milk is obtained during the earliest morning hours. Then it goes through a centrifugal machine which makes from six thousand five hundred to seven thousand revolutions a minute. This cleanses the milk, and yet causes only very slight physical or chemical changes. The microbes become reduced thereby about one third in number and the specific gravity diminishes somewhat, while the proportion of fat and also that of total solids and water are correspondingly increased. Thence the milk, constantly agitated so as to keep the fat evenly mixed in, is heated by streaming steam to a temperature of two or three centigrade degrees above the boiling point. Thereupon it is put into sterilized bottles, each holding one third of a litre, and closable by a porcelain plug and rubber ring fastened down by wire. After closure of the bottles, the principal sterilizing is effected by the employment of steam heat for ninety minutes. Five hours are required for the entire process, from the washing out of the bottles to the completion of the final sterilization. Then the albumin has become completely converted into peptone and the milk contains no living bacteria.

An improved automatic rubber cap for bottles used for sterilizing milk is recommended by Stutzer in the *Centralblatt für allg. Gesundheitspflege*, April, 1895, and is supplied by Ollendorf and Wilden, of Bonn. In the middle of the top of the cap is a ventilating opening allowing air to go out, but not to flow inward, since it closes tightly on pressure from without. Thus it causes the cap to sink in and thereby close the bottle automatically when sterilization is completed and the milk cooling. Its merit is that all this is effected entirely without the intervention of hands or mechanism, and it is said to work perfectly after repeated usage.

Oysters as a Source of Disease.—Oysters, eaten raw, may cause cholera, typhoid fever, parasitic diseases, etc., when they have recently been kept in sewage-contaminated waters. The danger likely to exist in such a food has been suggested repeatedly by Hamilton and others in British journals, and also in the *Bulletin* of the United States Fish Commission (vol. xiii, 1893, pp. 293 and 311). Clark (*Public Health*, May, 1894, p. 258) had called attention to cases of enteric fever caused by eating crabs caught at the mouth of the Humber, and the report of the chief medical officer of the Local Government Board, treating of cholera in England in 1893, gave a warning against eating contaminated oysters. In the *British Medical Journal*, 1895, pages 41, 61, 122, 171, 217, 391, 1285, and elsewhere, there are several reports of cases of cholera and typhoid fever from eating raw oysters. Most striking of all these was the report of Broadbent, who has encountered many typhoid cases obviously due to eating raw oysters. Ten such cases occurred in his own practice and observation within a month. Careful but vain search was made for sanitary defects; the milk and water had been boiled, and no other source could be demonstrated. In the *Journal of Pathology and Bacteriology*, April, 1895, p. 194, Delépine and Richmond give details of a fatal case of cholera in Manchester due to eating infected (Grimsby) oysters at the time of the epidemic in September or at the end of August, 1893.

A convincing epidemic has been studied by Conn (*Medical Record*, December 15, 1894, p. 743; see also New York *Evening Post*, November 19, 1894, p. 4). It lasted three weeks, causing about twenty-six febrile cases among Wesleyan students, of whom four or more died. All but three of these cases were pronounced to be genuine typhoid. Careful and skilled in-investigation eliminated the usual causes. No unsanitary surroundings, no contaminated water, milk, or ordinary food could be implicated. Eight days before the occurrence of the first case about a hundred members of three fraternities ate celebration suppers, for which the oysters were supplied by one dealer, who apparently furnished no other consumers at about that time, except a few at Amherst College, where these oysters also proved harmful. All the other students, as also townspeople and other persons who remained unaffected by the disease, obtained celery, ham, fruit, and other edibles from the same general purveyor. Besides the twenty-six students, only four outsiders were attacked by typhoid, and they had shared in the supper. Careful questioning corroborated the strong evidence that only the oysters were the cause of the disease.

Investigation into the history of these infecting oysters showed that they had been grown in deep water of Long Island Sound, but for more than a day before being eaten they had been kept at the mouth of a fresh-water creek in order to "fatten" by imbibing fresh water. Within about three hundred feet of the place where they had been deposited was the outflow of a sewer coming from a house in which were two cases of typhoid.

Tuberculosis Inoculated from Careless Tattooing.—Collings and Murray (*Brit. Med. Jour.*, June 1, 1895, p. 1200) report three cases where skin tuberculosis developed in lads whose arms were tattooed by a victim of advanced phthisis using his own saliva for rubbing up Indian ink in the palm of his hand. In from three to five weeks the pattern was raised and scabby, and had pus escaping at several points. The epicondylar and axillary glands were enlarged in each case.

The Diagnostic Value of Tuberculin and its use in combating bovine tuberculosis were discussed by Bang at Budapest, and reported in the *Veterinary Journal*, December, 1894, p. 389. He has made very many tuberculin injections, and performed more than a hundred and fifty autopsies of animals that had received injections, and knows intimately the results of an equal number made by other experts. Over nine per cent. of all these post-mortem examinations have failed to confirm the diagnosis. Two thirds of these unsatisfactory results seemed due to too small doses or conditions of fatigue, etc. In some autopsies tuberculous deposits (especially small and calcified ones) were recognized, and yet the employment of tuberculin during life had given no reaction. The reaction fails in many positive cases on testing by a second injection made even a year after the first one. Hence it is not well to rely upon the first injection.

This distinguished veterinary expert would not advise the slaughter of slightly tuberculous cows, and would allow them to breed. The majority of them are affected in but a very slight degree, and might for years bring forth calves wholly free from tuberculosis. Recovery from the disease may take place; for Bang states that he has very often found small and perfectly calcified tubercular deposits in aged cows. He made autopsies on twenty fœtal and newly born calves, but never found the disease transmitted to the fœtus unless the mother was in a very advanced tuberculous state, and the disease generalized. The calf is always born healthy when the cow that bears it is but slightly affected. Hence cows that appear healthy in spite of their having tuberculosis should be allowed to breed, but ought to be kept apart from perfectly healthy animals. Their calves must be removed from the infected sheds immediately after birth, and the milk that they receive must have been cooked, for the corroborated results of these autopsies showed that the majority of the tuberculous calves were infected through the alimentary canal, presumably by the raw milk. For two days after birth the colostral milk is needed, but it is safest after being heated to about 150° F. Bang's elaborate experiments with great herds show that newborn calves will develop into healthy cattle if separated at once from their slightly tuberculous mothers, fed only with sterilized milk, and kept in perfectly clean quarters.

The objections to the use of tuberculin as a diagnostic aid were discussed at the same meeting by other eminent veterinarians (*Deutsche Vtljhrschrift. f. öff. Gsdspfl.*, xxvii, 1895, p. 426). Hess, of Bern, declared that the use of tuberculin was attended with danger to the health of cattle. We notice often, he said, that, after injection, the beasts show extreme depression, lessened appetite, and diminished milk yield. The worst objection to its use is the tendency to produce fresh recurrences of the disease of an acute miliary type, while otherwise it would remain entirely latent and quiet in chalky centres. While Hess regards tuberculin as a valuable diagnostic means, he considers it unreliable in tuberculosis that is advanced. These views were contradicted by Nocard, Ostertag, Bang, and others, who pronounced tuberculin harmless or nearly so.

Miscellany.

The Treatment of Acute Rheumatic Endocarditis.—In the *Liverpool Medico-chirurgical Journal* for July there is an article on this subject by Dr. Richard Caton, of the Liverpool Royal Infirmary, in which he says that, feeling the importance of doing what was possible to further any inquiry which might mitigate the frequency of heart disease, he has, during the last thirteen years, sought for information as to how the occurrence of endocarditis might be prevented during acute rheumatism, and whether or not, when it did occur, in its incipient stage, any treatment would favor recovery. When the disease is fully established, he says, there can be little or no hope of cure.

Many forms of treatment have been suggested, such as the local employment of dry and wet cupping, blisters, iodine, ice bags, and the actual cautery, and the internal administration of potassium or sodium iodide, digitalis, aconite, etc., but Dr. Caton thinks that the use of a succession of small blisters about the cardiac region, together with the internal use of potassium or sodium iodide, not only gives as much promise as any method, but tends but little to disturb or weaken the patient. In one case the treatment had been successful and the aortic systolic bruit had disappeared, so the author treated almost all subsequent cases in this way, enjoining also a prolonged rest in bed.

With regard to the treatment, the patients are kept in bed, and, as far as possible, all exertion and exposure are avoided. To prevent chills a long flannel gown is worn, and in this way the profuse perspiration incident to the disease is not likely to be checked. A light milk diet is given. Gentle cholagogues are administered and salicylates are employed in such measure as the disease seems to demand. If the pain fails to yield, small blisters are immediately applied, followed by poultices, a method which rarely fails to give great relief. Hyperpyrexia or any special symptom receives appropriate treatment. The light diet and the rest in bed are continued for a considerable time after the disappearance of the pain.

There seems to be, says the author, strong ground for believing that perfect quiet and rest and avoidance of chills during acute rheumatism lessens the liability to cardiac complications. The proportion of cases of rheumatism with cardiac complications observed by Dr. Caton may be considered to have been, he says, comparatively small, and this he attributes to the precautions taken. He makes it a rule to examine the heart of every rheumatic patient every day in order to be on the lookout for any trouble that may be beginning. In a few cases endocarditis seems to occur coincidently with the first rise of temperature and with the joint affection. More frequently, though, it occurs during the first ten days, sometimes later, when the temperature has fallen and the pain has gone, and the patient thinks he is getting well. Sometimes it occurs during a relapse of the rheumatism. If a bruit has disappeared, it is also apt to recur during a relapse of the rheumatism. With regard to symptoms, says Dr. Caton, there is sometimes precordial discomfort, with a further rise of temperature, but generally no special symptom is apparent to the patient when an endocarditis has first become perceptible to the physician.

In the treatment of incipient endocardial inflammation, as soon as the bruit is perceptible, or even prior to that, during the preliminary stage, potassium or sodium iodide in ten-grain doses is at once administered three times a day, in addition to the salicylates, and over the apex a blister of about the size of a florin is applied. As soon as the irritation of this blister subsides a second is applied close to it, then a third, and so on, keeping the patient as quiet as possible, and allowing no exertion, no exposure, and not too much nitrogenous food. The blisters scarcely ever cause discomfort to the patient. The heart is examined daily. Frequently, says the author, in a week or ten days' time there is a gradual subsidence of the bruit; sometimes several weeks may elapse before this desirable change is accomplished. The prolonged rest in bed evidently has an important share in this good result.

Dr. Caton thinks that this method is an essentially reasonable one on the following grounds:

1. As regards the use of blisters. So-called counter-irritation has fallen much out of vogue in the profession, partly because the old theories on which it was formerly supported are quite untenable.

We can not believe, he says, that a poultice or blister draws blood from or acts directly in any manner upon an organ in the thorax or abdomen, but it by no means follows that the practice is bad because the original theory was unsound.

Such treatment has been largely abandoned by the profession, partly also because our predecessors carried it out to excess, so as to cause pain and to enfeeble the patient. If we apply a small blister or a poultice to the skin of the thorax or abdomen, the author believes its effect on the organs situated at some distance beneath is solely an effect transmitted through the nervous system and reflected from the nerve centres in the spinal cord and sympathetic system.

The nervous system consists of a series of segments arranged in a line, corresponding to the various somites of the body; each nerve segment governs to some extent the nutrition of its own somite, alike as regards epiblastic, mesoblastic, and hypoblastic structures. If we stimulate a cutaneous nerve, we influence the nerve cells in the spinal and sympathetic centres, and the impression is reflected to the visceral branches. It may be said that this is a mere theory, but it is a theory which explains many things: it explains the fact that a slight chilling of the skin of the thorax may cause pneumonia and bronchitis; that a splash of cold water will excite respiration in the infant, or set the action of the heart going during a faint.

Inflammation is impaired vitality. This impaired or perverted action exists in the tissues of the heart when rheumatic endocarditis is set up. We apply a temporary stimulus by reflex means to the trophic nerves of the heart, helping Nature to overcome the defective action. That, says Dr. Caton, is the theory on which this treatment by blistering is based. It has seemed to him that the assisted natural powers succeed, when, if not stimulated, they would fail.

After many years' experience of counter-irritation in varied forms, carried out in view of the theory stated above, Dr. Caton thinks he is justified in saying that it is one of the most valuable therapeutic methods for the relief of pain, for lessening inflammation, and for the stimulation of restorative processes. A very limited stimulation of cutaneous nerves will suffice. The author never uses large blisters, for small areas of vesication give great relief, and cause practically no suffering and no loss of strength.

2. As regards the administration of potassium or sodium iodide, it is given on account of its value in absorbing inflammatory products of low vitality.

Dr. Caton hopes that members of the profession who have the opportunity of observing cases of acute endocarditis will give this method a fair trial.

Bright's Disease and Insanity.—The *American Journal of Insanity* for July publishes an article on this subject by Dr. E. D. Bondurant, assistant superintendent of the Alabama Insane Hospital at Tuskaloosa. During the past four years, he says, a large volume of work bearing upon the question of the relation between nephritis and insanity has been done at the hospital. The work has consisted in a careful clinical study of the physical diseases, as well as of the forms of insanity shown by the insane patients, carried out by the aid of physical examinations and thousands of uranalyses, and supplemented by a post-mortem examination of the kidneys. The chemical and microscopical examinations of the urine have been made with a care and comprehensiveness far greater than are usually accorded this work in the ordinary clinical testing in general practice and in the average general hospital.

The collective results, says the author, so far as they relate to Bright's disease and insanity, are: That albumin, together with renal tube-casts, can be detected in the urine of more than half of the patients with chronic insanity treated in the Alabama Insane Hospital, and in the urine of fully seventy-five per cent. of the patients with recent insanity. That a large proportion of the patients whose renal secretion is thus abnormal exhibit at some time other evidence of renal disorder. That a small percentage (about twenty-five per cent.)

of those whose urine contains tube-casts and albumin present such clinical evidences of nephritis that any competent practitioner should be enabled to make the diagnosis of nephritic disease or complication without an examination of the urine. That seventy-five per cent. of the kidneys on post-mortem examination show pathological changes. Finally, the facts obtained seem to justify the opinion that many of the patients in whom insanity and nephritis co-exist are insane because of the nephritis—that is, the insanity is one of the mental symptoms of acute or chronic uræmic poisoning.

With regard to the important question, says Dr. Bondurant, as to whether Bright's disease causes insanity or not, almost all are agreed that in certain rare cases it does. The results of the work at the hospital, he says, warrant the opinion that it stands in more frequent causal relation to mental disturbance than is generally recognized.

To enter upon any extended argument, he says, for the purpose of showing that nephritis—its resultant uræmia—causes mental alienation, is surely at this time unnecessary. The fact is almost self-evident. There is the same reason for the belief that uræmia causes mental disorder that there is for the belief that alcohol causes the phenomena of alcoholic intoxication. The text-books describe, and every one recognizes, the ordinary mental symptoms of uræmia. It may be objected that such mental symptoms do not constitute insanity. Those who write definitions attempt to exclude from among the insanities those forms of mental alienation which are transient or which are obviously due to disease, and in practice we all accept this distinction and agree that febrile delirium, mild mental depression, or even delirium tremens are not to be called insanity; but it should be borne in mind that the difference is one of degree only. And the mental symptoms of uræmic self-poisoning are not always transient, and the disease often not obvious, in which event such cases, wherever placed in a system of classification, in every-day life get committed to hospitals for the insane, constituting a certain and not very small proportion of the melancholias, puerperal insanities, delirious manias, post-grippal and other post-febrile insanities admitted.

The question of the relationship between insanity and Bright's disease is simply a small though important part of the more general question of whether disease of any kind or degree causes insanity. It has been said elsewhere that the development of mental aberration of any kind and degree is dependent upon two factors, united in varying proportion in different cases—viz., inherent brain instability, and unwonted and unfavorable conditions external to the brain. The first of these factors is an inherited quality, and for all practical purposes unchangeable; the latter is supplied by the constantly changing and complex forces operating from without, the most important single agency being physical disease. The brain of ideal balance will exhibit perverted action only under the severest strain, actual destruction of anatomical elements being necessary to the manifestation of serious intellectual disorder. In an organism, however, predisposed by inheritance to a ready overthrow of mental equilibrium, changes in the quality of the blood supplied to the brain, or a slight lowering of general nutritive tone, will be quite sufficient to cause serious intellectual disturbance, and in extreme cases of this class very slight physical disorder, so slight as to be with difficulty detected, will be followed or accompanied by a degree of mental disorder out of all proportion to the gravity of the bodily disease.

Recent expressions of opinion, says the author, on the part of those best qualified to judge of the merits of a case under discussion, would indicate that the importance and frequency of toxic insanities resulting from nephritic and other diseases are gaining recognition. He cites Dr. B. D. Evans, of Morris Plains, who says that a little careful thought upon this subject has led him to believe that toxic agents entering the blood play a much greater part in the causation of mental alienations than has seemed to be the impression of the ablest authorities upon the subject. Dr. J. M. Mosher, in a recent report of the St. Lawrence State Hospital, remarks that a great divergence of opinion upon the relations of kidney and mental disease naturally follows upon hospital neglect of systematic uranalysis and indifference to mental manifestations on the part of the practitioner. That somnolence, stupor, vertigo, headache, spasms, convulsions, coma, and delirium may and do arise from the same causes as mania melancholia, is not inconsistent with our knowledge of the relations and functions of the brain.

Dr. Bondurant states that the purpose of his paper is to direct attention to the extremely frequent nephritic complications of insanity, and to record the fact that continued investigations in the Alabama Insane Hospital seem to corroborate the results obtained earlier. He thinks the subject should be further considered by the medical corps of the hospitals for the insane.

The Revocation of a License by the Utah Board of Medical Examiners.—A Salt Lake City correspondent informs us that at the July quarterly meeting of the Utah board of medical examiners a recent graduate of the Missouri Medical College appeared before the board for a license to practise medicine in the Territory, and passed the required examination. Immediately thereafter he billed the town, alleging the wonderful and extraordinary powers of the "human magnets," announced free lectures, and advertised in other ways.

At once the board served notice upon him to appear before them and show cause why his license should not be revoked for unprofessional and dishonorable conduct. The other parties to the fraud were arrested for practising without a license. They pleaded that they were only in the employ of the doctor, a licensed physician. The doctor substantiated this to the satisfaction of the court, and proposed to shield the parties by the license of the said board.

After all the strategy possible to gain time had been resorted to in the courts, the case was brought to trial and the license promptly revoked by the board. The result is that the persons implicated moved on to Nevada and California.

The Supreme Court of the Territory has affirmed the validity of the Utah Medical Bill and the powers of the board to decline, revoke, and withhold licenses to practise medicine, for cause; and the court further says that it is absurd to expect the judiciary to be the judge of the standing of medical colleges or of professional conduct. Such powers rightfully belong to the board of medical examiners.

"It is thus seen," says our correspondent, "that the Utah board of medical examiners are ready to uphold the honor of the profession without fear or favor. The board consists of four regulars, two homœopaths, and one eclectic. The requirements are second to none in the country, and are most rigidly carried out, as is seen by the number of applicants refused licenses at each examination. At a recent examination only two candidates were successful out of ten applicants."

We heartily congratulate the Utah board on their prompt performance of an act which, although disagreeable, was necessary to the good of the public and the profession.

The Treatment of Anal Pruritus.—In the *Revue internationale de médecine et de chirurgie pratiques* for July 20th M.

Morain remarks, in regard to this affection, that it is often hopeless, on account of the great resistance it offers to most forms of treatment and because it is very apt to return when it seems to have disappeared entirely.

In certain cases the cause of this disease is the existence of external hæmorrhoids; in other cases, in children especially, it is the presence of the *Vermicularis oxyuris;* in the majority of cases the cause is altogether unknown.

In the treatment of this affection, says M. Morain, it is, of course, essential to first combat the cause when it has been found. If the pruritus is idiopathic, topical applications and general remedies must be resorted to. With regard to the former, he says, a large number have been proposed, and their multiplicity shows that none of them are absolutely efficacious.

Irrigations and very hot lotions may be tried two or three times a day at first; the patient must avoid constipation, and, before the bowels are moved, he must take an oily enema and rub the anus with vaseline. Afterward the following remedies may be tried in the order in which they are given: 1. Every night and morning the affected part may be painted with a mixture of sixty grains of alum, thirty grains of calomel, and three hundred grains of glycerin. 2. One of the following ointments may be used instead: Calomel, sixty grains; vaseline, four hundred and fifty grains. Oleate of cocaine, a twentieth of a part; pure lanolin, three parts; vaseline and olive oil, each, two parts. Red mercury oxide, sixty grains; vaseline, four hundred and fifty grains. 3. A tampon of absorbent cotton saturated with a four-in-thirty solution of zinc oxide may be applied to the anal orifice. 4. The painful region may be cauterized with a one-in-ten solution of nitrate of silver. 5. In rebellious cases cauterizations with the galvano-cautery or scarifications may be resorted to.

Fatal Mammary Abscesses in the New-born.—The *Revue mensuelle des maladies de l'enfance* for August contains an abstract of an article by M. Pestalozza, which appeared in *La Pediatra* for July 20, 1894. M. Comby, says the author, reported three cases of mammary abscess in the new-born consequent upon repeated pressure. The author himself had observed the case of a healthy new-born infant, who, when it was four days old, presented a swelling of the breasts, especially of the left one, which had been particularly subjected to repeated pressure. It became inflamed, and suppuration set in. Lymphangeitis and an axillary adeno-phlegmon supervened. M. Pestalozza saw the child on the tenth day and incised both the mammary and the axillary abscesses, and applied an antiseptic dressing. The phlegmon, however, spread to the posterior wall of the thorax and the skin became undermined. A fresh incision was made, but the child became depressed and refused to nurse. A limited scleroma, at first of the legs, presented itself; then it became generalized, and the child died in a few days.

Baginsky and other writers maintain that the mammary abscesses of the new-born are benign, except in cases where the abscess is caused by puerperal infection. The preceding case, says the writer, proves that this statement is not absolutely true. Other causes of mammary abscess in the new-born, aside from puerperal infection, are infection from pressure or from suction, and infection from obstetrical bungling. In many cases the ætiology remains obscure; moreover, these abscesses are very rare.

A Medical Journal Jubilee.—The *Buffalo Medical and Surgical Journal*, having completed its fiftieth year, devotes a large part of the current number to an interesting account of its career up to the present time. The first number of the journal was published fifty years ago under the editorship of Dr. Austin Flint, who was also its owner. This number contained thirty-two pages, and the first volume an aggregate of three hundred and eighty pages. With the beginning of the second volume the words "and Reporter" were dropped from its title, and it has been published since that time under the name of the *Buffalo Medical and Surgical Journal.* With a view, however, to simplicity, says Dr. Potter, it will now resume its former name and will be known hereafter as the *Buffalo Medical Journal.*

It was the first medical journalistic venture, says the writer, between New York, Cincinnati, and St. Louis, and its establishment was the result of much thought on the part of the editor. It was a success from the beginning, as might be expected, he says, from the energy and character of the man who founded it.

Its history involves the history of the medical profession of Buffalo for the past fifty years. It has recorded the principal medical events that have occurred there during half a century, and it has reported cases that served to make the men of that period famous. During the civil war the pages of the *Journal* became an historical record of the medical officers who entered the military service from Buffalo and its vicinity.

During the lifetime of the *Journal* nearly all the improvements in medicine and in surgery that are valuable have been recorded in its pages, besides many others of great importance. At the present time, says Dr. Potter, it is the only medical journal published in the area bounded on the north by Toronto, on the east by Rochester, on the south by Pittsburgh, and on the west by Cleveland and Detroit.

As a testimonial to the valued support that the *Journal* has received from its contributors, subscribers, and advertisers, says the writer, it now offers itself in an enlarged form and a new dress, for it well understands that it can not hope to succeed without the continued favor of the medical profession, which it has enjoyed so long. It proposes to do all it can to deserve a continuance of professional approbation. It will continue in the future, as in the past, to attempt to reflect the opinions of the whole profession of medicine in this region on scientific questions and on the progress of medicine, and it proposes to labor anew to maintain the unification of the profession and for the advancement of medical science. It is especially devoted to the principles of higher medical education, and believes that these principles are best exemplified in the maintenance of State medical examining and licensing boards. It will advocate the establishment of such boards in those States that have not yet adopted the plan, as well as a higher standard of preliminary education.

This is the fiftieth year of its publication. While it is old in years, it must be young in activity, and it proposes to indicate its youthfulness by donning new garments, manifesting new energy, increasing the number of its pages, and otherwise improving itself so as to make it worthy to stand in the front rank with the best medical journals of the land. In greater Buffalo there will be a greater *Buffalo Medical Journal.*

Dr. Potter also refers to the various medical colleges and hospitals which have been established during the past fifty years in Buffalo. Many excellent illustrations are given, and there are two views of the city of Buffalo showing the marvelous growth that has taken place in the city during half a century. Dr. Potter says that he has tried to give a *résumé* of the salient events of that period, and in the illustrations he has sought to couple the past with the present, and, in some instances, to foreshadow the future.

THE NEW YORK MEDICAL JOURNAL, August 31, 1895.

Original Communications.

OPERATIVE SURGERY
IN THE SERVICE OF WILLIAM T. BULL, M. D.,
AT THE NEW YORK HOSPITAL,
From July 1, 1890, to January 1, 1895.

By E. M. FOOTE, M. D.,
LATE HOUSE SURGEON.

(*Continued from page 231.*)

HERNIA.

There were a hundred and nineteen operations for hernia, eighty-six of these inguinal, twenty-three femoral, and ten ventral. Like appendicitis, hernia is a subject whose surgical treatment has been much improved in the last five years. The introduction by Bassini of the operation which bears his name has been the chief factor in this improvement. The novel feature of his operation is the transplantation of the cord, allowing the complete closure of the inguinal canal and external ring. Many of the cases in this list are too recent to be yet classed as permanent cures, but the results of this operation, both at the New York Hospital and at other hospitals in the city, have been much more satisfactory than those heretofore obtained.

In this series of cases are a number of the rarer forms of hernia. In one inguinal hernial sac (I. 55) the left tube and ovary were found. Four times the cæcum formed part of the contents of the sac, twice without the appendix (I. 46, F. 19), and twice with it (I. 57 and 60). In the last of these cases the cæcum, or colon to be exact, was only partially covered by peritonæum, having "slipped down" behind it as it were. The same complication arises in sigmoid hernia, and if the intestine "slips down" in front of the peritonæum instead of behind it, it lies in front of what little sac there is, and the operator who cuts down vigorously to open the supposed sac finds he has opened the intestine instead. But without this added complication, when the intestine has "slipped down" behind the peritonæum and the sac is readily found and opened, the condition is still awkward enough. Dissection of the sac, even if possible, and ligation at the neck have no effect on the hernia which lies outside of it. In case No. 60 the whole mass of sac, its contents, and the colon were reduced, and the canal and ring closed according to Bassini's method. Eighteen months later there was a small, easily reducible hernia not larger than a walnut, painlessly controlled by a truss. This, if not a perfect result, must be considered a substantial improvement over the condition at the time of operation, when an irreducible painful hernia of the size of a child's head had been for six hours strangulated.

In two other cases than those mentioned the appendix appeared as part of the contents of the sac (I. 47 and 49). Neither case presented special difficulty and both did well. In one a knuckle of small intestine was two days strangulated. It still had a good color, however, and was reduced.

Strangulation was present in all in thirteen cases—eight inguinal and five femoral. In eleven of the cases the small intestine was involved, in one the sigmoid flexure, in one simply omentum. In the case of sigmoid hernia (I. 12) the bowel was already necrotic and perforated, and the general condition of the patient was very bad. The constrictions were fully freed. Death from septic absorption occurred in forty-eight hours.

In one other case the gut was suspicious and was not reduced. A small portion of it sloughed away, and two weeks later a circular resection was performed with success.

In the eleven remaining cases the strangulated small intestine (omentum in one case) was reduced and no bad effects followed. In one instance (I. 59) death occurred ten days after the operation. The death was considered to be due to the extensive pulmonary tuberculosis and weak heart, as the intestine, although still very dark, showed no other evidence of gangrene, and there was no peritonitis.

There were two other deaths recorded, one as a direct result of operation. In Case F. 1 the hernia was found to be omental and intestinal. In tying off the irreducible omentum the house surgeon included the small intestine in the ligature. It was discovered before much force was applied and the damage to the gut was not considered serious, so the hernia was reduced and the wound closed. It healed by primary union, and the progress of the case was perfect until the eleventh day, when the patient was suddenly attacked with peritonitis and died. Examination showed a perforation of the intestine at the point where it had been included in the ligature.

Case F. 11 is a still more unusual one. An operation was performed with apparent success for a right femoral hernia of five years' existence. It was as large as an orange and contained small intestine and omentum. These were reduced, the usual high ligation of the sac was performed, and the wound was closed. Three days later symptoms of strangulation came on in a small left inguinal hernia which had existed for years. On the next day, in the absence of Dr. Bull, one of the other surgeons of the hospital operated upon this hernia. It was found to be intestinal. The contents were reduced, the sac was excised, and the wound was drained. Ten days after the first operation and six days after the second one, when both wounds had united and all stitches were out, the patient had an attack of abdominal pain with collapse and died in twelve hours. An autopsy was not allowed. The cause of death was possibly perforation of the strangulated bowel.

This death-rate must be regarded as very satisfactory. There were seventy-eight cases of reducible and irreducible inguinal hernia and no death; eight cases of strangulated inguinal hernia with one death; twenty-three cases of femoral hernia, five of them being strangulated, with three deaths; and ten cases of ventral hernia without a death. This is certainly below the average mortality heretofore obtained. Compare, for example, Banks's report in the *British Medical Journal* for November 11, 1893, page 1043, of a hundred and seventeen cases of non-strangulated inguinal hernia with six deaths. This only shows that the development of surgical technique and better methods of treatment for hernia has reduced indeed the mortality from operation to a very small figure.

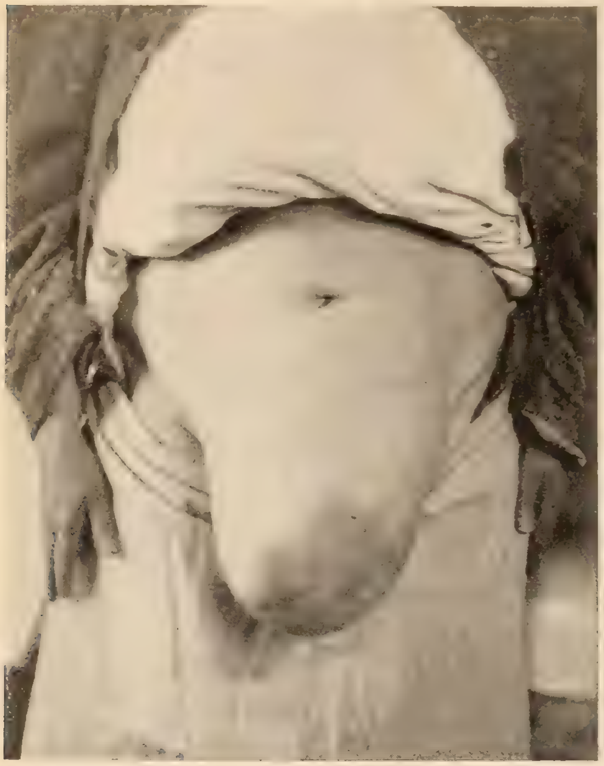

FIG. 3.

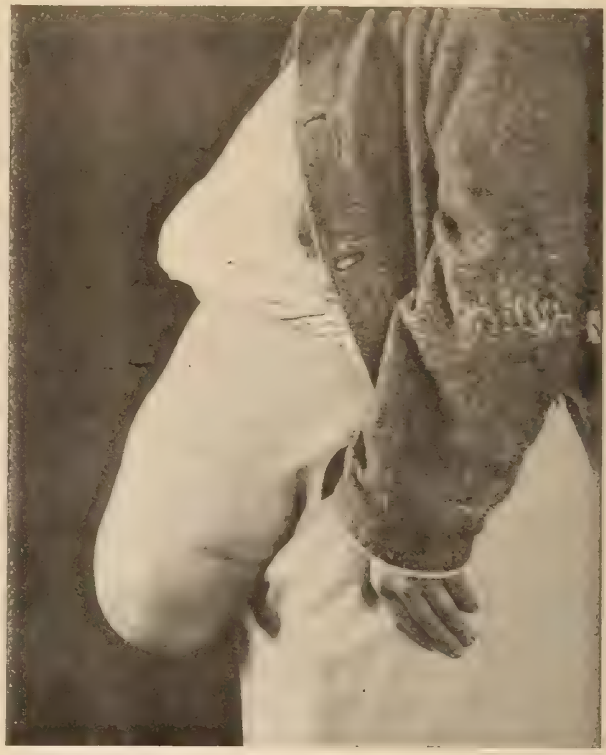

FIG. 4.

Figs. 3 and 4 show the condition of the hernia in the case of J. H., operated on four years previously for umbilical hernia. Two years after the operation the hernia recurred, and increased rapidly until it attained the dimensions shown. This case is No. 10 in the ventral herniæ.

INGUINAL HERNIA.

Number.	Date of operation.	Age.	Sex.	Duration.	Right or left.	Size of hernia.	Contents of sac.	Condition.	Operation.	Deep-suture material.	Drainage.	Immediate result.	Subsequent result.
1	June 30, 1890.	54	M.	14 yrs.	R.	....	Omentum.	Three days, strangulated.	Ligation of sac.	Catgut.	Rubber.	Suppuration.	Recurred in 1 year.
2	Aug. 27, 1890.	34	M.	9 yrs.	R.	Cocoanut.	Omentum.	Three weeks, irreducible.	Ligation of sac.	Catgut.	Rubber.	Primary union.	
3	Sept. 10, 1890.	19	M.	12 yrs.	L.	Orange.	Omentum.	Congenital, irreducible.	Ball.	Catgut.	Rubber.	Primary union.	No recurrence in 57 mos.
4	Sept. 13, 1890.	14	M.	14 yrs.	L.	Olive.	Undescended testicle.	Congenital.	Bassini.	Catgut.	None.	Primary union.	No recurrence in 57 mos.
5	Oct. 9, 1890.	24	M.	9 yrs.	L.	Egg.	Sac empty.	Also varicocele.	Ligation of sac.	Catgut.	Gauze.	Primary union.	No recurrence in 56 mos.
6	Feb. 11, 1891.	36	M.	20 yrs.	L.	Goose egg.	Sac empty.	....	Ligation of sac.	Catgut.	Rubber.	Primary union.	
7	Feb. 14, 1891.	21	M.	8 yrs.	L.	Egg.	Sac empty.	....	Ball.	Catgut.	None.	Suppuration.	No recurrence in 27 mos. Truss.
8	Feb. 21, 1891.	14	M.	3 mos.	L.	Walnut.	Omentum.	Irreducible.	Ball.	Catgut.	Gauze.	Primary union.	No recurrence in 9 mos.
9	Mar. 31, 1891.	8	M.	8 yrs.	L.	Egg.	Fibrin.	Inflamed.	Ligation of sac.	Catgut.	Rubber.	Granulation.	No recurrence in 36 mos.
10	July 8, 1891.	26	M.	26 yrs.	R.	Egg.	Omentum.	Irreducible.	High ligation of sac.	Catgut.	Rubber.	Primary union.	
11	Aug. 16, 1891.	29	M.	12 yrs.	R.	Walnut.	Small intestine.	Four hours, strangulated.	High ligation of sac.	Catgut.	Rubber.	Primary union.	No recurrence in 31 mos.
12	Aug. 24, 1891.	49	M.	19 yrs.	L.	Two fists.	Sigmoid.	Two days, strangulated.	Incision of necrotic bowel.	None.	Gauze.	Death from sepsis in 48 hours.	
13	Aug. 28, 1891.	24	M.	6 yrs.	R.	Fist.	Omentum.	Irreducible.	Ball.	Catgut.	Rubber.	Suppuration.	
14	Sept. 1, 1891.	32	M.	5 yrs.	R.	Egg.	Omentum.	....	High ligation of sac.	Catgut.	Gauze.	Primary union.	Abscess of omentum and ventral hernia. No recurrence in inguinal hernia in 40 mos.

Number.	Date of operation.	Age.	Sex.	Duration.	Right or left.	Size of hernia.	Contents of sac.	Condition.	Operation.	Deep-suture material.	Drainage.	Immediate result.	Subsequent result.
15	Sept. 4, 1891.	48	M.	3 yrs.	R.	8 × 4 in.	Intestine.	Recurrent; operation 3 years before.	Czerny.	Catgut.	Glass.	Granulation.	Recurrence, size of walnut, in 1 mo.
16	Sept. 4, 1891.	24	M.	3 yrs.	R.	Orange.	Omentum.	. . . .	High ligation of sac.	Catgut.	Glass.	Primary union.	No recurrence in 18 mos. Truss.
17	Sept. 4, 1891.	43	M.	43 yrs.	R.	Egg.	Small intestine.	. . . .	Czerny.	Catgut.	Rubber.	Primary union.	Recurrence in 1 mo.
18	Sept. 9, 1891.	32	M.	6 yrs.	L.	Cocoanut.	Omentum.	Irreducible.	Ball.	Catgut.	Glass.	Suppuration.	Recurrence in 8 mos.
19	Sept. 13, 1891.	19	M.	5 mos.	L.	Egg.	Omentum.	. . . .	High ligation of sac.	Catgut.	Glass.	Primary union.	Recurrence in 26 mos.
20	Sept. 13, 1891.	18	M.	4 mos.	L.	Egg.	Sac empty.	. . . .	Ball.	Catgut.	None.	Primary union.	
21	Mar. 2, 1892.	37	M.	4 yrs.	R.	Goose egg.	Omentum.	Congenital.	Bassini.	Silk-worm.	Glass.	Primary union.	
22	April 16, 1892.	20	M.	1 yr.	R.	Egg.	Sac empty.	Properitoneal.	High ligation of sac.	Catgut.	None.	Primary union.	
23	June 4, 1892.	53	M.	5 yrs.	L.	Fist.	Sigmoid.	. . . .	Ligation of sac.	Catgut.	None.	Primary union.	Recurrence in 1 mo.
24	June 11, 1892.	27	M.	27 yrs.	R.	Egg.	Omentum.	Congenital.	Bassini.	Kangaroo tendon.	Rubber.	Primary union.	
25	June 16, 1892.	35	M.	2 yrs.	R.	Walnut.	Omentum.	Irreducible.	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 36 mos. No truss.
26	June 18, 1892.	36	M.	4 yrs.	L.	Egg.	Omentum.	Irreducible.	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 9 mos.
27	June 24, 1892.	19	M.	1 day.	R.	Egg.	Small intestine.	One day, strangulated.	Ball.	Kangaroo tendon.	None.	Suppuration.	No recurrence in 5 mos. Truss.
28	June 29, 1892.	51	M.	10 yrs.	L.	Egg.	Sac empty.	Direct.	Czerny.	Kangaroo tendon.	None.	Primary union.	
29	June 29, 1892.	27	M.	15 yrs.	L.	Egg.	Small intestine.	. . . .	Bassini.	Kangaroo tendon.	None.	Granulation.	
30	July 2, 1892.	22	M.	1½ yr.	L.	Egg.	Omentum.	Direct.	Bassini.	Catgut.	None.	Primary union.	
31	July 2, 1892.	29	M.	29 yrs.	R.	Egg.	Omentum.	Congenital properitoneal.	Bassini.	Kangaroo tendon.	None.	Primary union.	
32	July 4, 1892.	24	M.	1½ yr.	L.	Egg.	Omentum.	Adherent.	Bassini.	Catgut.	None.	Primary union.	No recurrence in 35 mos. No truss.
33	July 14, 1892.	20	M.	20 yrs.	R.	Walnut.	Small intestine.	Congenital; 24 hours, strangulated.	Bassini.	Catgut.	None.	Suppuration.	Small recurrence in 30 mos.
34	Sept. 24, 1892.	24	M.	24 yrs.	R.	Egg.	Omentum.	Congenital.	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 33 mos.
35	Oct. 20, 1892.	35	M.	5 yrs.	R.	Goose egg.	Omentum.	Adherent.	Bassini.	Kangaroo tendon.	None.	Suppuration.	No recurrence in 32 mos. No truss.
36	Oct. 29, 1892.	32	M.	12 yrs.	R.	Two fists.	Omentum.	Irreducible.	Bassini.	Kangaroo tendon.	None.	Suppuration.	No recurrence in 3 mos. Truss.
37	Nov. 3, 1892.	21	M.	3 wks.	R.	Egg.	Omentum.	Adherent.	Bassini.	Kangaroo tendon.	None.	Suppuration.	Slight recurrence in 4 mos.
38	Dec. 17, 1892.	24	M.	3 mos.	L.	Fist.	Omentum.	Irreducible.	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 30 mos. Truss.
39	Dec. 21, 1892.	40	M.	10 yrs.	L.	Two fists.	Intestine.	Adherent.	Czerny.	Catgut.	Glass.	Suppuration.	One year later ring admits thumb.
40	Jan. 16, 1893.	41	F.	26 yrs.	L.	Pigeon's egg.	Sac empty.	. . . .	Bassini.	Catgut.	None.	Suppuration.	No recurrence in 30 mos.
41	Jan. 16, 1893.	41	F.	1 yr.	R.	Pigeon's egg.	Sac empty.	. . . .	Bassini.	Kangaroo tendon.	None.	Suppuration.	No recurrence in 30 mos.
42	Jan. 21, 1893.	17	F.	2 yrs.	L.	Egg.	Sac empty.	. . . .	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 30 mos.
43	Jan. 23, 1893.	16	M.	16 yrs.	R.	Egg.	Omentum.	Adherent.	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 1 mo.
44	Jan. 28, 1893.	16	M.	2 yrs.	L.	Egg.	Appendix epiploica.	. . . .	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 1 mo.
45	Feb. 8, 1893.	3	M.	3 yrs.	R.	Walnut.	Sac empty.	. . . .	Bassini.	Kangaroo tendon.	None.	Suppuration.	
46	April 2, 1893.	20	M.	12 yrs.	R.	Egg.	Cæcum.	Adherent.	Bassini.	Kangaroo tendon.	None.	Suppuration.	No recurrence in 26 mos.
47	May 1, 1893.	38	M.	25 yrs.	R.	Goose egg.	Small intestine and appendix vermiformis.	Adherent, 2 days, strangulated.	Bassini.	Silk-worm.	None.	Primary union.	
48	May 4, 1893.	36	F.	8 mos.	L.	Walnut.	Sac empty.	. . . .	Bassini.	Kangaroo tendon.	None.	Primary union.	
49	Oct. 4, 1893.	1½	M.	1½ yr.	R.	Egg.	Appendix vermiformis	Adherent.	Bassini.	Kangaroo tendon.	None.	Primary union.	
50	Oct. 14, 1893.	52	M.	7 yrs.	L.	Egg.	Omentum.	Adherent.	Bassini.	Kangaroo tendon.	Gauze.	Primary union.	No recurrence in 20 mos.
1	Oct. 28, 1893.	30	M.	12 yrs.	R.	Goose egg.	Intestine.	. . . .	Bassini.	Kangaroo tendon.	None.	Primary union.	
2	Nov. 4, 1893.	53	M.	1½ yr.	L.	Orange.	Omentum.	Adherent.	Bassini.	Kangaroo tendon.	None.	Primary union.	Slight recurrence in 6 weeks. Truss since.

Number.	Date of operation.	Age.	Sex.	Duration.	Right or left.	Size of hernia.	Contents of sac.	Condition.	Operation.	Deep-suture material.	Drainage.	Immediate result.	Subsequent result.
53	Nov. 8, 1893.	53	M.	30 yrs.	R.	Cocoanut.	Omentum.	Adherent.	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 20 mos.
54	Nov. 15, 1893.	10	M.	10 yrs.	L.	Egg.	Sac empty.	....	Bassini; plaster splint.	Kangaroo tendon.	None.	Primary union.	
55	Nov. 16, 1893.	19	F.	19 yrs.	L.	Egg.	Left tube and ovary.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 1 mo.
56	Nov. 16, 1893.	20	M.	½ yr.	R.	Lemon.	Omentum.	....	Bassini.	Kangaroo tendon.	None.	Granulation.	No recurrence in 2 mos.
57	Nov. 22, 1893.	4	M.	4 yrs.	R.	Goose egg.	Cæcum, appendix vermiformis, and testicle.	Congenital.	Testicle reduced; Bassini; plaster splint.	Kangaroo tendon.	None.	Suppuration.	
58	Dec. 4, 1893.	12	M.	2 yrs.	R.	Goose egg.	Sac empty.	Congenital, hour-glass.	Bassini; plaster splint.	Kangaroo tendon.	None.	Suppuration.	No recurrence in 2 mos.
59	Dec. 9, 1893.	60	M.	2 yrs.	R.	Orange.	Small intestine.	Six days, strangulated.	Bassini.	Kangaroo tendon.	None.	Primary union.	Death; 10 days of pulmonary tuberculosis; no peritonitis.
60	Dec. 13, 1893.	46	M.	2 yrs.	R.	Child's head.	Small intestine, cæcum, and appendix vermiformis.	Adherent; 6 hours, strangulated.	Sac reduced with contents; Bassini.	Kangaroo tendon.	None.	Granulation.	Recurrence, size of walnut, in 18 mos.; persistent sinus.
61	Dec. 16, 1893.	9	M.	2 wks.	R.	Egg.	Sac empty.	Hydrocele of cord.	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 18 mos.
62	Dec. 27, 1893.	39	M.	6 mos.	R.	Egg.	Omentum.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 18 mos.
63	Jan. 9, 1894.	7	M.	7 yrs.	L.	Orange.	Omentum.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	
64	Jan. 9, 1894.	49	M.	14 mos.	R.	Goose egg.	Sac empty.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 1 mo.
65	Jan. 10, 1894.	27	M.	27 yrs.	L.	Orange.	Omentum.	Congenital.	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 16 mos.
66	Jan. 15, 1894.	28	M.	14 mos.	R.	Goose egg.	Sac empty.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 17 mos. No truss.
67	Jan. 20, 1894.	63	M.	10 yrs.	R.	Goose egg.	Sac empty.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 10 mos.
68	Jan. 20, 1894.	63	M.	10 yrs.	L.	Egg.	Sac empty.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 10 mos.
69	Jan. 24, 1894.	29	M.	12 yrs.	R.	Goose egg.	Omentum.	Congenital.	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 17 mos.
70	Feb. 22, 1894.	33	M.	2 yrs.	R.	Egg.	Omentum.	Adherent.	Bassini.	Kangaroo tendon.	None.	Primary union.	
71	Feb. 22, 1894.	7	M.	7 yrs.	L.	Egg.	Sac empty.	....	Bassini.	Kangaroo tendon.	None.	Granulation.	No recurrence in 16 mos. No truss.
72	Mar. 2, 1894.	22	M.	5 yrs.	R.	Egg.	Omentum.	Properitoneal congenital.	Bassini.	Kangaroo tendon.	None.	Primary union.	Twenty-one days, abscess.
73	Mar. 9, 1894.	16	M.	16 yrs.	R.	Egg.	Sac empty.	Congenital.	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 15 mos. No truss.
74	Mar. 14, 1894.	19	M.	6 yrs.	R.	Egg.	Sac empty.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 1 mo.
75	Mar. 14, 1894.	40	M.	6 yrs.	R.	Egg.	Omentum.	Adherent.	Bassini.	Kangaroo tendon.	None.	Granulation.	No recurrence in 3 mos.
76	April 11, 1894.	60	F.	3 yrs.	L.	Goose egg.	Sac empty.	Appendix epiploica adherent in ring.	Bassini.	Kangaroo tendon.	None.	Primary union.	
77	April 11, 1894.	42	M.	15 mos.	L.	Egg.	Sac empty.	Large intestine adherent above ring.	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 14 mos.
78	April 13, 1894.	36	F.	5 yrs.	R.	Egg.	Sac empty.	Appendix epiploica adherent in ring.	Bassini.	Kangaroo tendon.	None.	Primary union.	Truss. No recurrence in 14 mos.
79	April 13, 1894.	35	F.	8 yrs.	L.	Goose egg.	Sac empty.	Large intestine adherent above ring.	Bassini.	Kangaroo tendon.	None.	Granulation.	
80	April 14, 1894.	33	M.	9 wks.	L.	Goose egg.	Sac empty.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	
81	April 14, 1894.	36	M.	5 yrs.	R.	Orange.	Omentum.	Inflammation.	Bassini.	Kangaroo tendon.	None.	Granulation.	No recurrence in 14 mos. No truss.
82	April 16, 1894.	38	M.	6 yrs.	L.	Egg.	Sac empty.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	
83	May 30, 1894.	55	M.	1 yr.	R.	Orange.	Sac empty.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	Seventeenth day, a small abscess.
84	May 30, 1894.	24	M.	6 yrs.	R.	Orange.	Sac empty.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	No recurrence in 12 mos. No truss.
85	June 18, 1894.	27	M.	5 yrs.	R.	Walnut.	Sac empty.	....	Bassini.	Kangaroo tendon.	None.	Primary union.	
86	Nov. 22, 1894.	26	M.	3 yrs.	L.	Egg.	Sac empty.	Congenital.	Bassini.	Kangaroo tendon.	None.	Primary union.	

FEMORAL HERNIA.

Number.	Date of operation.	Age.	Sex.	Duration.	Right or left.	Size of hernia.	Contents of sac.	Condition.	Operation.	Deep-suture material.	Drainage.	Immediate result.	Subsequent result.
1	Aug. 20, 1890.	45	F.	12 yrs.	L.	Orange.	Small intestine; omentum.	Irreducible.	High ligation.	Catgut.	Gauze.	Primary union.	Eleventh day, fatal peritonitis from perforation of intestine wounded at operation.
2	Sept. 10, 1890.	24	F.	9 yrs.	R.	Goose egg.	Small intestine; omentum.	Four weeks, irreducible.	High ligation.	Catgut.	Gauze.	Primary union.	
3	Sept. 23, 1890.	48	F.	3 days.	R.	Egg.	Small intestine.	Three days, strangulated (Littre's).	High ligation.	Catgut.	Gauze.	Primary union.	No recurrence in 12 mos.
4	Oct. 18, 1890.	45	F.	2 yrs.	R.	Egg.	Omentum.	Five days, irreducible.	High ligation.	Catgut.	Gauze.	Primary union.	
5	July 27, 1891.	67	M.	45 yrs.	L.	Cocoanut.	Omentum.	....	High ligation.	Catgut.	Gauze.	Suppuration.	Recurrence, size of fist, in 3 mos.
6	Feb. 17, 1892.	22	F.	1 mo.	R.	Walnut.	Sac empty.	....	High ligation.	Catgut.	None.	Primary union.	
7	Mar. 12, 1892.	40	F.	2 yrs.	L.	Pullet's egg.	Small intestine.	Three days, strangulated.	Ring divided.	....	Gauze.	....	Second week, circular enterorrhaphy; cured.
8	April 12, 1892.	40	F.	6 yrs.	R.	Fist.	Small intestine.	Reducible.	High ligation; purse-string suture.	Catgut.	None.	Granulation.	
9	June 6, 1892.	45	F.	3 days.	R.	Walnut.	Small intestine.	Three days, strangulated.	High ligation.	Catgut.	None.	Primary union.	No recurrence in 36 mos.
10	June 11, 1892.	51	M.	40 yrs.	R.	Goose egg.	Omentum.	Irreducible.	High ligation.	Kangaroo tendon.	None.	Primary union.	No recurrence in 3 mos.
11	June 13, 1892.	50	F.	5 yrs.	R.	Orange.	Small intestine and omentum.	....	High ligation.	Kangaroo tendon.	None.	Primary union.	Tenth day, death from strangulated left inguinal hernia.
12	June 27, 1892.	40	F.	1 yr.	R.	Walnut.	Omentum.	Irreducible.	High ligation.	Catgut.	None.	Primary union.	No recurrence in 36 mos.
13	July 5, 1892.	25	F.	2 yrs.	L.	Walnut.	Omentum.	Irreducible.	High ligation; purse-string suture.	Catgut.	None.	Primary union.	
14	Sept. 24, 1892.	61	F.	3 yrs.	R.	Fist.	Omentum.	Adherent.	High ligation.	Catgut.	Gauze.	Primary union.	Recurrence in 4 mos. No truss.
15	Oct. 30, 1892.	32	F.	4 yrs.	R.	Egg.	Small intestine.	Three days, strangulated; perforation.	Division of ring.	....	Gauze.	Following day bowels opened.	Fifty-sixth hour, death from peritonitis.
16	Nov. 19, 1892.	32	F.	3 mos.	L.	Egg.	Omentum.	Irreducible.	High ligation.	Catgut.	None.	Primary union.	No recurrence in 1 mo.
17	Oct. 4, 1893.	40	F.	12 yrs.	R.	Pigeon's egg.	Omentum.	Adherent.	High ligation.	Catgut.	Gauze.	Primary union.	
18	Oct. 13, 1893.	52	F.	11 yrs.	L.	Egg.	Small intestine; omentum.	Three days, strangulated; adherent.	High ligation.	Catgut.	Gauze.	Primary union.	No recurrence in 20 mos.
19	Oct. 27, 1893.	60	F.	20 yrs.	R.	Child's head.	Cæcum; omentum.	Adherent.	High ligation; suture of aponeurosis.	Kangaroo tendon.	Gauze.	Granulation.	No recurrence in 10 mos.
20	Dec. 8, 1893.	69	M.	2 mos.	R.	Pigeon's egg.	Omentum.	....	High ligation.	Catgut.	Gauze.	Primary union.	No recurrence in 1 mo.
21	Dec. 13, 1893.	48	F.	8 yrs.	L.	Walnut.	Sac empty.	Recurrent after operation 6 years before.	High ligation; purse-string suture.	Kangaroo tendon.	Gauze.	Granulation.	
22	April 20, 1894.	52	F.	1 yr.	R.	Walnut.	Fluid.	Inflammation.	High ligation; purse string.	Catgut.	None.	Primary union.	No recurrence in 14 mos.
23	June 17, 1894.	62	F.	10 yrs.	R.	Walnut.	Omentum.	....	High ligation.	Catgut.	None.	Primary union.	No recurrence in 12 mos.

VENTRAL HERNIA.

Number.	Date of operation.	Age.	Sex.	Duration.	Location.	Size of hernia.	Contents of sac.	Condition.	Operation.	Deep-suture material.	Immediate result.	Subsequent result.
1	June 4, 1892.	16	M.	Congenital.	Umbilical.	Walnut.	Sac empty.	....	Suture recti muscles.	Kangaroo tendon.	Primary union.	No recurrence in 36 mos.
2	July 4, 1892.	18	M.	Congenital.	Umbilical.	Walnut.	Omentum.	....	Suture in 3 layers.	Catgut.	Primary union.	Recurred in 1 mo.
3	Oct. 26, 1893.	60	F.	4 yrs.	Umbilical.	Orange.	Transverse colon; small intestine; omentum.	Adherent.	Suture in 3 layers.	Kangaroo tendon.	Primary union.	
4	Dec. 9, 1893.	36	M.	3 yrs.	Umbilical.	Goose egg.	Sac empty.	....	Suture in 3 layers.	Kangaroo tendon.	Primary union.	

Number.	Date of operation.	Age.	Sex.	Duration.	Location.	Size of hernia.	Contents of sac.	Condition.	Operation.	Deep-suture material.	Immediate result.	Subsequent result.
5	Jan. 11, 1894.	35	F.	12 yrs.	Umbilical.	Orange.	Sac empty.	....	Suture in 3 layers.	Kangaroo tendon.	Primary union.	Recurred in 5 mos.
6	Jan. 11, 1894.	35	M.	6 mos.	Epigastric.	Goose egg.	Omentum.	....	Suture in 3 layers.	Kangaroo tendon.	Primary union.	No recurrence in 1 mo.
7	Jan. 20, 1894.	34	M.	3 yrs. following laparotomy.	Right iliac.	Egg.	Omentum.	Adherent.	Suture in 3 layers.	Kangaroo tendon.	Primary union.	Twenty-first day, small abscess.
8	Jan. 26, 1894.	63	M.	2 yrs.	Umbilical.	Egg.	Omentum.	Adherent.	Suture in 3 layers.	Kangaroo tendon.	Primary union.	Twenty-first day, small abscess.
9	May 26, 1894.	57	F.	8 yrs.	Umbilical.	Child's head.	Omentum.	Adherent.	Suture in 3 layers.	Kangaroo tendon.	Primary union.	Slight recurrence in 13 mos.
10	Dec. 13, 1894.	29	F.	2 yrs.	Umbilical.	Water-melon.	Intestine and omentum.	Adherent.	Suture in 3 layers.	Kangaroo tendon.	Primary union.	No recurrence in 1 mo.

Results of Operations for Hernia.

	INGUINAL HERNIA.					
	Ligation of sac.	Suture of canal.	Bassini.	Primary union.	Granulation.	Total.
Recurrence in 1 to 6 months.........	3	..	2	3	2	5
Recurrence in 6 months to 1 year.....	1	1	..	..	2	2
Recurrence in 1 to 2 years	..	..	1	..	1	1
Recurrence in 2 to 3 years	1	..	1	1	1	2
Total	5	1	4	4	6	10
No recurrence in 1 month...........	..	..	5	5	0	5
No recurrence in 2 months..........	..	..	2	1	1	2
No recurrence in 3 months..........	..	..	2	..	2	2
No recurrence in 6 months..........	..	2	3	4	1	5
No recurrence in 1 year.....	2	..	12	11	3	14
No recurrence in 2 years...	1	1	9	6	5	11
No recurrence in 3 years............	2	..	1	2	1	3
No recurrence in 4 years............	1	1	1	3	0	3
Total	6	4	35	32	13	45

	FEMORAL HERNIA.			VENTRAL HERNIA.		
	Primary union.	Granulation.	Total.	Primary union.	Granulation.	Total.
Recurrence in 6 months.............	1	1	2	2	..	2
Recurrence in 6 months to 1 year....	..	..	..	1	..	1
Total.........................	1	1	2	3	..	3
No recurrence in 1 month...........	2	..	2	2	..	2
No recurrence in 3 months..........	1	..	1	..	..	..
No recurrence in 6 months..........	1	..	1	..	..	..
No recurrence in 1 year.............	4	..	4	..	..	..
No recurrence in 3 years............	2	..	2	1	..	1
Total.........................	10	..	10	3	..	3

The conclusions which may be drawn from the table of final results are these:

Of fifty-five cases of inguinal hernia heard from after the operation, ten recurred, or eighteen per cent.; of the thirty-six cases of healing by primary union, four recurred, or eleven per cent.; of the nineteen cases in which there was suppuration, six recurred, or thirty-one per cent. Viewed from an operative standpoint: Of eleven cases where the sac was ligated, five recurred, or forty-five per cent.; of the five cases where, in addition to the ligation of the sac, the canal was sutured, one recurred, or twenty per cent.; of the thirty-nine cases where, in addition to the ligation of the sac, the cord was transplanted and the canal and external ring were closed, four recurred, or ten per cent.

These figures may not be exact, as the time of report is in some cases too short to speak of a permanent cure; but their relative value is certain, and they show clearly enough that primary union is more favorable to permanent cure than granulation, and that the operation known as Bassini's is better than the operations in which the cord is not transplanted. In most of the Bassini operations kangaroo tendon was used to suture Poupart's ligament and the conjoined tendon.

OPERATIONS UPON THE STOMACH.

Six operations were performed upon the stomach, five for stricture of the pylorus, and one for stricture of the œsophagus. Four of the six strictures were due to malignant disease. Only one case ended in recovery, a gastroenterostomy after a recurrent benign stricture of the pylorus. The anastomosis was made nearly five years ago with two-and-a-quarter-inch catgut rings, and has never given any sign of contracting.

Death resulted in one case from peritonitis set up by a leaky suture; in another from broncho-pneumonia; in two others from exhaustion. The cause of death in the fifth case was not evident. The operation for cancer of the pylorus performed in these cases has always had a high mortality. In an article originally published in the *Correspondenz-Blatt. f. schweiz. Aerzte*, October 15 and November 1, 1893, but widely quoted in other journals, Kocher records his experience with it as showing a mortality of sixty-six and two thirds per cent. He therefore abandoned it, and devised an operation which consists in resection of the pylorus, suture of the cut ends of the stomach and of the duodenum, and a lateral anastomosis between the duodenum and the stomach. Of the nine patients so operated upon, seven withstood the operation. His contention for the operation is that the danger of leakage is greatly diminished by it.

CASE I. *Carcinoma of the Pylorus; Resection; Gastroenterostomy; Death from Peritonitis.*—J. H., a woman, aged sixty-three years; one year vomiting; noticed tumor four months ago. It is now hard, nodular, movable, about three inches by two, and situated to the left of the umbilicus.

August 20, 1890.—The stomach was washed out, and under ether a six-inch incision was made in the linea alba. The neoplasm was well localized in the pylorus, and there were three nodules close by it. The omentum on either side was severed and ligatured, and a section of stomach, three inches on the lesser curvature and five inches on the larger curvature, removed. The openings into the duodenum and stomach were closed by continuous catgut and interrupted Lembert silk stitches. Twelve inches from the beginning of the jejunum a gastro-enterostomy was performed with Abbe's catgut rings. The operation lasted three hours and five minutes. For two days all went well. Then bilious vomiting began, followed on the third day by signs of peritonitis and on the fourth day by a discharge of bile from the abdominal wound. Death occurred on the seventh day, with moderate fever, never over 100·4°. Examination showed that bile had escaped into the abdominal cavity from the end of the duodenum.

Case II. *Benign Stricture of the Pylorus Recurrent after Loreta's Operation; Gastro-enterostomy; Recovery.*—P. C., a man, aged forty-one years. Three years previously Loreta's operation had been performed by Dr. Bull for benign stricture of the pylorus. Symptoms fully returned two years after the operation.

September 4, 1890.—Gastro-enterostomy through an incision at the outer border of the left rectus. A loop of jejunum, twelve inches from its origin, was selected, and the anastomosis made with Abbe's two-and-a-quarter-inch catgut rings. Recovery, with no evidence of peritonitis. Vomiting began after the ingestion of solid food on the fifth day, and continued intermittently until the patient was able to assume an upright position. Two weeks after the operation, there had been a gain of seventeen pounds in weight. Four years and nine months later the patient was in perfect health, and had regained his full weight.

Case III. *Carcinoma of the Pylorus; Gastro-enterostomy; Excision of Pylorus; Death.*—R. W., a man, aged fifty-four years, entered the hospital with a history of lifelong dyspepsia and constipation; for five months there had been pain relieved by vomiting; for two months a tumor. This measured two inches by one inch, was just above the umbilicus, and moved with respiration. There was marked emaciation.

March 4, 1891.—Gastro-enterostomy was performed, the jejunum near its origin being chosen. Abbe's catgut rings, two inches and a quarter in diameter, were used. The patient did fairly well. He received four nutrient enemata daily. The most unpleasant symptom was a persistent bronchitis set up by the ether. The wound healed *per primam.*

Nineteen days later the abdomen was opened through the scar of the previous operation. The tumor was of the pylorus and discrete. The pylorus was isolated by tying with gauze on either side. The omentum on either side was divided and ligatured. A section of the stomach, measuring eleven centimetres on the greater curvature and six centimetres on the lesser, was excised, and the free ends were sutured with catgut and silk, Lembert style. The operation lasted two hours. Enemata were continued, but not retained on the second day, and vomiting set in, with delirium; temperature, 102°; pulse, 126. Death occurred in fifty-five hours. All the sutures were found tight, and there was no peritonitis. A mural abscess contained six drachms of pus. The anastomosis was thirty-three centimetres from the pylorus, and was two centimetres in diameter.

The pyloric opening was nine millimetres in diameter. The tumor, which involved both the duodenal and gastric sides of the pyloric ring and extended into the muscular layer, was a carcinoma.

Case IV. *Stricture of the Œsophagus; Gastrostomy; Broncho-pneumonia; Death.*—D. C., a man, aged thirty-nine years, had for six months been suffering from gradually increasing symptoms of stricture of the œsophagus; for four weeks only fluid had been swallowed. Emaciation severe. All bougies were arrested at ten inches and a half from the teeth. Gastrostomy was advised and accepted.

August 7, 1891.—Under ether a two-inch incision was made along the outer border of the left rectus. Peritonæum was stitched to skin. The stomach was readily lifted into the wound, held in position by two transfixion pins, and sutured to the abdominal wall by silk. Seventy-two hours later the stomach was opened, a tube inserted, and feeding begun. The patient had an annoying bronchitis immediately after his etherization, which resulted in broncho-pneumonia and death on the sixth day. No abdominal symptoms.

Case V. *Benign Stricture of the Pylorus; Pyloroplasty; Death.*—As a result of chronic gastritis, L. W., a man, aged forty years, presented a stomach whose lower border just cleared the symphysis pubis. The organ held nine pints with comfort, and when it was full the peristaltic action could plainly be seen through the emaciated abdominal wall. Vomiting was excessive, but never bloody, and there was increasing weakness. No tumor could be felt. The diagnosis of simple pyloric stenosis was made and a plastic operation advised but declined. Several weeks later the patient returned to the hospital, as his unfavorable progress had reconciled him to extreme measures. His symptoms were now exaggerated and prostration was extreme.

April 18, 1892.—A median laparotomy was performed. Through a three-inches-and-a-half incision the constricted pylorus was found firmly adherent to the liver. Adhesions were tied and divided, and an inch-and-a-half longitudinal incision was made through the most constricted portion. This was sewed up in the opposite direction, so that the suture line was transverse (Heinecke-Mikulicz operation). Catgut was used for the mucous membrane, silk for the wall, the suture line was buried by one row of interrupted peritoneal silk sutures (Lembert), and the omentum stitched over the suture line. Abdominal wound closed.

The patient rallied from the operation well, but seemed unable to absorb nourishment. Enemata were not retained, and liquids in the stomach had to be washed out in a fermented condition. Death occurred from exhaustion on the fifth day. There was no sign of peritonitis before or after death, and the suture line was in perfect condition. The pyloric constriction was found to be, upon microscopical examination, simple fibrous tissue.

Case VI. *Cancer of the Pylorus; Gastro-enterostomy; Death.*—C. G., a man, aged fifty-nine years, with a history of gastric trouble for three months, and for two weeks of constant vomiting of ingesta. On his entrance the general condition was poor and emaciation was extreme. A hard nodular mass was plainly felt in the epigastrium, moving with respiration.

June 21, 1894.—Under ether a three-inch median incision was made. The mass was found to be situated in the pylorus and was discrete. Anastomosis between the stomach and the jejunum, eighteen inches from the duodenum, was performed by means of Murphy's button. Abdominal wound closed.

The patient reacted well from the anæsthetic; there was no febrile reaction, but his condition grew steadily feebler, and death resulted in four days. No post-mortem examination was permitted.

Case VII. *Carcinoma of the Stomach; Exploratory Laparotomy; Prolapse of Intestine; Recovery.*—R. D., a man, aged fifty-two years. This case is noteworthy for the peculiar complication after the operation. The history is briefly that of gastric pain and emaciation for nine months, a tumor slowly growing for four months, and profuse diarrhœa for four weeks.

September 5, 1890.—Through a five-inch median incision nearly the whole circumference of the stomach at its middle was observed to be the seat of a malignant growth, involving also the pancreas. The wound was closed in layers. On the sixth day, union being perfect, the stitches were removed. That night, when coughing, the patient felt "something give way," but was not particularly disturbed by it. On morning rounds the dressing was removed and the omentum and part of the small intestine were found outside the abdominal cavity, the whole suture line having gaped. The wound was resutured and once more healed, but the diarrhœa returned and persisted, and death occurred fourteen days after the operation without a sign of peritonitis.

OPERATIONS UPON THE LIVER AND GALL BLADDER.

There were four operations upon the liver—two of them for abscess and two for cysts. One of these cysts was an echinococcus cyst; in the fluid from the other nothing characteristic could be found. In one case the liver was already adherent to the peritonæum and the abscess was opened at once. In the three other cases the liver was stitched to the abdominal wall and two days later incised or aspirated. Three of these patients made a perfect recovery. In the fourth case several aspirations failed to show the situation of the abscess, and the patient died six weeks after the operation of septic absorption. In all these cases it was the right lobe which was affected.

Case I. *Abscess of the Liver; Incision and Drainage; Recovery.*—I. G., a man, aged twenty-nine years; for ten years a resident of South America; for one month had had dysentery and for three weeks pain in the hepatic region. Liver dullness extended below the ribs, and in this situation there was a diffuse swelling; the needle drew pus.

August 30, 1890.—An incision an inch outside of the rectus muscle opened an abscess cavity in the liver; the parietal and visceral layers of peritonæum were adherent; the abdominal cavity was not opened. Discharge at first profuse, growing rapidly less. Complete recovery in a month. No irrigation.

Case II. *Echinococcus Cyst; Incision and Drainage; Recovery.*—J. K., a man, aged twenty-nine years. Three months before the operation this patient passed through an acute attack of pain in the hepatic region with jaundice, lasting about a week. Two months before his entrance the attack recurred, and since that time jaundice had been present. Pain had been slight, but there had been a marked loss of flesh and strength, and on his entrance there was an afternoon temperature of 104·4°; pulse, 108. Echinococcus was suspected, but nothing connected with the patient's habits could be found to explain such infection. The stools were fatty; an exploring needle in the sixth space in the mammary line drew pus, in which many echinococcus hooklets were found.

June 21, 1892.—A three-inch vertical incision was made under chloroform three inches to the right of the median line. The liver surface was seen to be studded with cysts. The gall bladder contained a small soft stone, which was not disturbed. The liver was stitched for an inch and a half in the wound, which was elsewhere closed.

There was little shock from the operation. On the second day the cyst presenting in the wound was opened under cocaine, and a great quantity of yellowish fluid evacuated containing hooklets and "skins." The fever immediately moderated, the jaundice cleared up, and the stools became normal. From time to time the discharge contained many additional cyst walls. Two months after the operation the patient was discharged from the hospital in excellent health. A small sinus still persisted. He has been lost sight of since.

Case III. *Abscess of the Liver; Laparotomy; Death from Exhaustion.*—P. McE., a man, aged twenty-seven years. Six weeks before his entrance he had a chill, followed by fever, abdominal pain, and vomiting. The attack lasted ten days. Two weeks later there was a similar attack, with jaundice. Upon his entrance the liver dullness was enlarged, there was flatness over the lower right chest, and the abdomen was distended. Aspiration in these three regions withdrew a greenish-yellow fluid: that from the pleura being serous, that from the liver and peritoneal cavity sero-purulent.

November 15, 1893.—A three-inch incision was made along the costal margin. A large amount of ascitic fluid escaped. Aspiration of the liver withdrew the same sort of fluid as had been obtained before the operation. The wound was filled with iodoform gauze and left open. Bile-stained fluid escaped for a week and then adhesions between the liver and parietal wall shut off the peritoneal cavity completely. On three occasions punctures were made into the liver in different directions, but no fluid was obtained. The patient sank gradually and died six weeks after the operation. An autopsy showed an abscess of the right lobe of the liver containing very thick fluid and necrotic masses. There were also an ulcerative colitis and fluid in the right pleural cavity.

Case IV. *Cyst of the Liver; Aspiration; Recovery.*—D. G., a boy, aged seven years. Four weeks before his entrance the mother had noticed a slight swelling in the right upper abdominal quadrant; pain was inconsiderable. The child appeared well nourished. Liver dullness from the fourth space to two inches below the free costal border.

January 27, 1894.—A two-inch incision, under ether, was made along the border of the rectus. The right lobe of the liver was enlarged and harder than normal. A thin colorless fluid was obtained by aspiration. The liver was stitched in the wound. It adhered well. On the seventh day it was aspirated and several ounces of clear fluid were obtained. On the fourteenth day it was again tapped. The patient then had measles and had to be transferred to another hospital. A year later his father wrote that he had had no more pain and that the discharge had ceased soon after his leaving the hospital. His general health has been excellent.

The operations upon the biliary passages were five cholecystotomies for gallstones with two deaths—one from peritonitis on the second day and one from broncho-pneumonia on the eleventh day.

The complications were, in one case, a carcinoma not discovered at the operation, which retarded the complete recovery and caused death in six months; in another case the presence of five calculi in the common duct. An incision was made into the common duct, the stones were removed, and the duct was stitched up. The patient was very ill for a few days, but made a rapid recovery.

It was simply impossible to make a diagnosis of carcinoma in the case in which that coexisted with gallstones, as the symptoms up to the operation were undoubtedly caused by the gallstones. Certainly, recurrent attacks of colic in a patient presenting a dilated gall bladder and without jaundice or any history of jaundice do not mean malignant disease. It is much more rational to consider the cancer secondary to the gallstones; and at the time of operation it must have been still very small, as it was not detected.

The risk in cholecystotomy is very slight in a patient in good condition. Robson * reports thirty cases without a death, these being cases in which severe jaundice and cancer did not exist. The risk, if these conditions are present, is somewhat greater. He prefers the operation which was employed in the cases here reported—the opening of the gall bladder and the stitching of it in the abdominal wound. To stitch it to the aponeurosis rather than to the skin is less likely to give rise to a permanent fistula.

Case V. *Cholecystotomy for Gallstones; Death from Peritonitis.*—J. W., a man aged forty-eight years. For four months he had had attacks of colic in right side, followed by jaundice and the passage of gallstones in the dejections. Indistinct tumefaction. June 25, 1890, a vertical incision in the mammary line four inches in length. The gall bladder was moderately enlarged; it was opened and fifteen small stones were extracted. It was stitched in the abdominal wound. A probe could not be passed into the duodenum, but no calculus could be felt in the common duct. The patient rallied well from the operation, but on the following day had a temperature of 102·4° F., with a rapid, feeble pulse. This was followed by well-marked signs of peritonitis; bilious vomiting followed, and death in forty-eight hours.

Case VI. *Cholecystotomy for a Gallstone in the Cystic Duct; Death.*—W. S., a man, aged forty-eight years, had suffered from attacks of biliary colic, with jaundice, for sixteen years before his entrance into the hospital. The attacks had been increasing in severity and frequency until they reached two or three a week. Nothing could be felt in the abdomen, and, although the patient was emaciated and slightly jaundiced, his general condition did not indicate malignant disease.

April 9, 1892.—A four-inch incision was made along the border of the right rectus. The liver was readily palpated and seemed normal. The gall bladder could not be found, but about in the place where the cystic duct ought to be was felt a calculus two thirds of an inch in diameter. An incision was made and the stone removed. The position of the gall bladder was now determined by a probe to be as shown in the diagram, the bladder being somewhat shrunken as well as displaced. It was quite impossible to bring the bladder into the external wound. A rubber tube was placed in the incision into the duct and packed about with iodoform gauze. Considerable bile escaped into the abdominal cavity and was mopped up as thoroughly as possible with sponges. No irrigation. Wound partly closed.

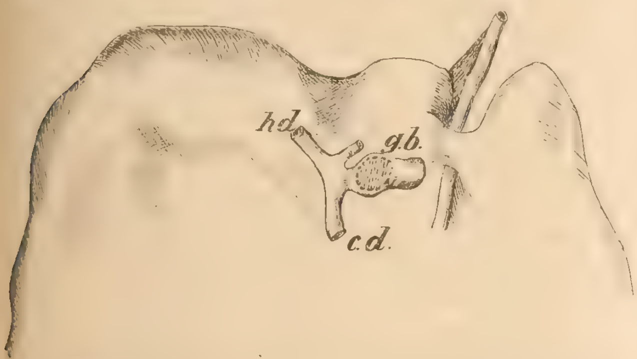

Fig. 5. The liver viewed from below, showing the common duct, the hepatic duct, the cystic duct containing a calculus, and the inflamed and displaced gall bladder.

At the time of operation the patient had some bronchitis, which was aggravated by the ether, and the sputum soon became purulent and patches of pneumonia developed. There were progressive emaciation and weakness, and death occurred on the eleventh day, apparently from the broncho-pneumonia. There were no abdominal symptoms, there was no evidence of escape of bile into the peritonæum, and the urine did not contain bile pigment. After the removal of the tube, on the eighth day, the flow of bile from the external wound was much freer than it had been before.

Case VII. *Cholecystotomy for Gallstones; Recovery.*—P. H., a woman, aged thirty-one years, had an attack of typhoid fever three months before her admission into the hospital. This was followed by pneumonia. No history of biliary colic; never jaundiced. Three days before her entrance she was seized with violent pain in the hepatic region, resulting in a chill and vomiting. The abdomen was very tender, and to the right of the umbilicus could be made out a rounded swelling seven inches in diameter, flat on percussion, and adjacent to the area of liver dullness. A vertical incision made under ether on January 20, 1894, proved this swelling to be the gall bladder distended to the size of a cocoanut, but not adherent. The peritoneal cavity was protected and the bladder incised. It contained twenty-eight faceted stones and a quantity of muco-purulent fluid. The stones extended into the cystic duct, but the common duct was free. The opening in the gall bladder was stitched into the abdominal wound and a rubber tube left in the gall bladder. The wound discharged bile freely. On the eighth day a faceted stone was passed by the fistula. In a month after the operation the patient was able to walk about—the first time in four months. Three months after operation a small sinus persisted.

Case VIII. *Cholecystotomy for Gallstones; Carcinoma; Death in Six Months.*—E. H., a woman, aged fifty years, had had three attacks of biliary colic without jaundice—twelve months, three months, and one month before her entrance into the hospital. A tumor, increasing in size, had been palpable for six months. There had been loss of flesh and strength.

December 3, 1894.—A five-inch incision was made under ether along the outer border of the right rectus muscle. The gall bladder was readily found. It was dilated to the size of a goose egg. It was incised and many faceted stones and much muco-purulent fluid were evacuated. One stone was so firmly wedged in the cystic duct that it had to be removed by incision. This incision was sutured, the other left open, and the bladder stitched into the abdominal wound with deep gauze drainage. There was a good reaction, and the wound healed well. The gauze was removed on the eighth day. A sinus persisted and discharged a small amount of bilious mucus. The patient left the hospital in seven weeks, but pain and emaciation progressed and it soon became evident that malignant disease was present. Six months after the operation she died and an autopsy revealed carcinoma of the gall tract which had invaded the liver and had formed nodules in the peritonæum around the gall bladder, as well as in the transverse colon and head of the pancreas. Jaundice in this case did not appear until within two weeks before death.

Case IX. *Gallstones in the Gall Bladder and Common Duct; Cholecystotomy and Choledochotomy; Recovery.*—R. J., a man, aged thirty-seven years, had had attacks of biliary colic, with jaundice, for several years. A hard nodule of the size of an egg was palpable in the region of the gall bladder. The area of hepatic dullness was not enlarged.

April 27, 1894.—Under ether a six-inch incision was made parallel to the right costal margin. The omentum and transverse colon lay in front of the gall bladder, to which they were adherent. Adhesions were partially separated, retraction stitches were passed through the gall bladder, the viscus was opened, and fifteen calculi were removed. Other calculi were wedged into the common-bile duct. An incision three quarters of an inch in length was made in the duct near the duodenum and five calculi were extracted. A probe now passed readily into the duodenum, the duct was closed by Lembert suture, and a slip of gauze was passed from the suture to the external wound. A rubber tube was placed in the gall bladder, which was sutured in the abdominal wound. The patient reacted poorly with a temperature of 102° and a pulse 140 to 170; there was hiccough, with vomiting of greenish fluid. These symptoms subsided in four days. Rectal alimentation was employed for six days. Then feeding by the stomach was begun. The gauze was removed on the seventh day and the rubber tube on the fourteenth day. The sinus was entirely closed in five weeks.

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* *British Medical Journal*, April 15, 1893, p. 789.

(To be continued.)

ELECTROLYSIS BY A CURRENT CONTROLLER FOR THE REDUCTION OF SPURS OF THE NASAL SÆPTUM.*

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CUSTOMARILY spurs or excrescences of the nasal sæptum are removed by surgical means by the knife, saw, and drill, and I wish to disclaim now, as I did in a recent preliminary report on the same subject, any idea of indorsing electrolysis as a universal substitute for the surgical method, for the latter, in skillful hands, is more rapid, more precise, and in the case of bony spurs certainly more effective than is electrolysis. Certain European operators have advocated the method by electrolysis; a few have praised it with perhaps a degree of extravagance, and yet it would seem that a modicum of actual fact must underlie so much enthusiasm.

My own experiments have been undertaken to determine the scope or, better stated, the exact limitations of this method—in what class of cases it is possible by means of it to avoid a more or less sanguinary operation, and to what extent one can utilize it to reduce spurs and thickened areas of minor degree, those which are scarcely deserving of surgical treatment with its possibilities of troublesome hæmorrhage, but which one would like to see resolved for the sake of the additional nasal space and better drainage which would thereby accrue to the patient.

A *résumé* of the previous literature of the application of electrolysis to the treatment of nasal spurs need be but brief. Miot,† of Paris, was the originator in 1888, and following him Garel,‡ of Lyons, reported his results in thirty cases; but my attention was first drawn to the method by Moure* at the Ninth International Medical Congress at Berlin in 1890, where he read an elaborate paper on the subject and described minutely the technique. Moure and Bergonie† have since embodied their studies in a monograph, published in Paris in 1892, and Moure‡ again in 1894, before the Eleventh International Medical Congress at Rome, discussed in a paper the Comparison between Electrolysis and other Methods of Treatment for the Destruction of Deviations and Spurs of the Nasal Sæptum. Moritz Schmidt, in his book (*Die Krankheiten der oberen Luftwege*), published in 1894, confirms the efficacy of the method as advanced by the French operators, a significant fact which tends to remove the sense of skepticism with which the subject was first viewed in America.

Among others may be mentioned Peyrissac, Meyer, and Heryng, all cited by Newcomb.

Only two papers by American authors have come under my observation; one by Newcomb,# of New York, with a report of two cases and an excellent review of the bibliography and technique, and the other by Ballenger,‖ of Chicago, with a report of three cases.

All of these operators have employed as the source of the electricity a primary galvanic battery of about thirty cells. The inconveniences of this apparatus, and especially its unreliability when called into use only at irregular and prolonged intervals, has deterred many from trying the electrolytic method. I have sought to avoid these annoyances by adapting the Edison electric-light circuit to the purpose by means of lamp resistance and the McIntosh current controller. The controller, together with a milliampèremeter, cords, and needles, is contained in a small drawer within easy reach as one sits in position for the treatment of patients, and is always ready for immediate use without waste or corrosion. It is as easily and readily applied as the galvano-cautery, except for the few minutes' additional time that its energy needs to accomplish the work. When used it is necessary only to pull out the drawer, adjust the milliampèremeter, and insert the needles.

The current strength necessary for electrolysis of nasal spurs is from fifteen to forty milliampères, measured with the resistance of the spur in the circuit, and, to supply this current, from fifteen to thirty cells of a galvanic battery would ordinarily be used with a corresponding electromotive force of from twelve to twenty volts or more. A current suitable for electrolysis should be characterized by moderately high tension or voltage and comparatively low current strength or ampèrage.

The Chicago Edison current has an electro-motive force of one hundred and ten volts, which must be reduced by the current controller. The ampèrage, of course, depends on the amount of resistance in the circuit, but it also can be correspondingly reduced by the resistance of lamps and the

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* Read before the American Laryngological Association at its seventeenth annual congress. For the discussion, see page 246.

† *Revue mensuelle d'otologie et de laryngologie*, cited by Garel (*loc. cit.*).

‡ *Annales des maladies de l'oreille, du larynx*, etc., tome xv, 1889, pp. 638.

* *Verhandlung des X. internationalen medicinischen Congresses*, Band iv.

† *Du traitement par électrolyse des déviations*, etc., Paris, 1892.

‡ *The Journal of Laryngology, Rhinology, and Otology*, May, 1894.

Medical Record, August 5, 1893.

‖ The *Journal of the American Medical Association*, November 10, 1894.

controller so that with the spur in the circuit it measures the requisite number of milliampères.

The McIntosh current controller was described at length in my preliminary report. It will suffice now to say that it is composed of a number of resistance coils of varying size, arranged in two rows, with sliding contacts to each, so that the patient may be placed in a shunt circuit to one or more coils. The coils on the left divide the electromotive force into tenths, and its contacts I have named the decimal slide, while the coils on the right divide the electro-motive force into hundredths, named in consequence the centesimal slide. Thus, if placed in direct connection with the one-hundred-and-ten-volt Edison circuit, and the decimal slide be advanced to 1, enough coil resistance is removed to secure a current intensity of one tenth of a hundred and ten volts, equal to eleven volts. In like manner, if advanced to 2, two tenths of a hundred and ten volts is secured, equal to twenty-two volts. If now the centesimal slide be advanced to any given contact, say 4, there will be added four hundredths of a hundred and ten volts, or four volts, equal now to twenty-six volts.

But the decimal division of an initial one-hundred-and-ten-volt circuit is still too painful to the patient on advancing the contacts, so I have resorted to the expedient of placing a sixteen-candle-power lamp in the circuit (in series), the resistance of which reduces the original electromotive force aside from the action of the controller to an initial current of fifty-five volts. The result is, that on advancing the decimal slide of the controller to 1, enough coil resistance is removed to secure a current of one tenth of fifty-five volts, or, on advancing to 2, two tenths of fifty-five volts, equal to eleven volts; and on advancing the centesimal slide there will be added at each successive coil contact one one-hundredth, two one-hundredths, three one-hundredths, or four one-hundredths of the initial fifty-five volts, or, if stopping at 4, equal to two volts, which, added to the eleven volts of the decimal slide, makes in all thirteen volts. This is about the arrangement of the mechanism with which I have treated most of my cases. The controller has been constructed and has been thoroughly tested with a view to absolute safety, the details of which have previously been described.

I have used exclusively the bipolar method, as it is conceded by all to be equally if not more effective than the monopolar, and it is more convenient to the operator and less disagreeable to the patient. Not more than two needles, one representing the positive and the other the negative pole, should be employed, as there is no advantage in the use of multiple points, and it is thought to be more difficult to estimate the exact amount of destruction when more than two points have been inserted.

The parts of the needles intended for insertion into the spur should be from fifteen to twenty millimetres in length, about half a millimetre in thickness, and they should lie parallel and distant from each other about three millimetres.

The material which I have found best adapted to the purpose, all things considered, is irido-platinum, in which enough iridium is placed to make the composition very hard and stiff. A very sharp point can be given this substance, and its penetrating power is almost equal to steel. Not being oxidizable, irido-platinum needles can be used repeatedly, and hence can be permanently soldered to metallic conductors running through a light handle, which then constitutes the needle-holder. I have devised and had constructed by the McIntosh Company such an instrument, which meets all requirements, and it has the advantage of being always ready for immediate use, without loss of time in screwing and unscrewing steel or gold-plated needles into an adjustable needle-holder (Fig. 1). Moure and others recommend steel needles, especially such as are used by sailmakers. That connected with the positive pole will oxidize, which does not harm the patient, but necessitates replacing the needle by a new one at each treatment, and I have been unable to obtain a neat, light adjustable needle-holder which would firmly fix and carry two needles, and to use separate needle-holders is awkward. Even steel will not penetrate bone, and irido-platinum will easily penetrate cartilage.

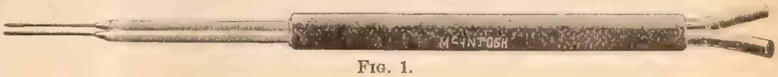

Fig. 1.

I have treated by the electrolytic method ten cases, and for the sake of brevity, and to enable us the better to draw definite conclusions therefrom, these may be classed in three types according to the composition and location of the spur and the degree of success attained. Three of these cases have already been reported in detail, so that others will be selected for elaboration as representatives of the various types.

Type I. Strictly Cartilaginous Spurs.

Case I.—Mr. R., a medical student, has witnessed in my clinic at the Northwestern University Medical School operations for the removal of sæptal spurs by both the surgical and electrolytic methods, and he willingly submits his spur to treatment by the latter process. It happens to be of the strictly cartilaginous class, the sort of spur best adapted for reduction by electrolysis.

It is an ovoid excrescence, truncated or flat at the base, projecting from the right side of the sæptum, a distance at its point of greatest thickness of about five or six millimetres, sufficient to occlude almost entirely the right nostril. It is confined to the quadrangular cartilage and is implanted upon the convexity of a slight but, in itself, not material deviation of this part of the sæptum.

Electrolysis by means of the Edison current and McIntosh current controller, one sixteen-candle lamp in the circuit; bipolar method, with the author's needles of irido-platinum, which were inserted into the body of the spur well toward the bottom, the thickest part, one needle above the other and extending almost through the spur, a distance from the front to the back of about eighteen millimetres. A ten-per-cent. cocaine solution on cotton had previously been applied to both sides of the sæptum for fifteen minutes. The decimal slide of the current controller was pushed to 1; the needles then being inserted, the milliampèremeter registered twenty milliampères; the slide was then advanced to 2, which equals a current of eleven volts, the meter registering forty milliampères. On making contact 2, a slight shock was felt. No further increase was made in the current in this case, as forty milliampères is adequate. This was maintained for eight minutes, during the last five of which the patient complained of feeling faint, but it was not necessary to change position or suspend the treatment. The pain was slight, the patient not regarding it as of any moment. There was evolution of gas with crackling sounds, and at the end of eight minutes the larger part of the spur had assumed a mottled bluish and whitish aspect.

At the end of one week the slough had not yet separated, although some shrinkage in size was apparent. Annoyance occasioned by incrustation was at once relieved by the use of an ointment of yellow oxide of mercury in vaseline, two grains to the ounce.

At the end of two weeks the slough had disappeared, leaving a granulating, grooved surface through the lower part of the spur. The loss of substance is pronounced; had it been more so, perforation must have resulted.

At the end of three weeks the treatment was repeated, but for a shorter period of five minutes, to the upper part of the spur, which is not so thick. This followed much the same course, and the result is satisfactory, abundance of space and a fairly even surface having been obtained.

The chief difficulty in the reduction of cartilaginous spurs is to determine exactly when sufficient destruction has been effected. One does not wish to produce a perforation, and a close watch should be maintained in the opposite nostril and the electrolytic action discontinued on the slightest mottling in hue or escape of gas from that side of the sæptum. But there is reason to think that too great destruction can be effected even short of the production of these danger signals, and other safeguards, such as not inserting the needles too deeply, nor permitting the treatment to endure too long, should be kept in mind. The duration necessary depends somewhat, of course, upon the current strength; but with the meter registering from fifteen to forty milliampères I have not found it necessary to exceed from six to eight minutes for the devitalization of cartilage. The continental authors cited mention fifteen to twenty-five minutes as the duration of their séances, which would seem unnecessarily long.

To Type I may be assigned four other cases of the entire number treated.

Case II of this type.—Mr. A. G. M. complained of inability to breathe through the right side; the cartilaginous sæptum was deflected to the right and, in addition, situated toward the base of the convexity was an excrescence which projected sufficiently forward to approach the partially collapsed ala and so close the nostril. Electrolysis was selected because of the nervous disposition of the patient, he having so little self-control that the surgical method might have involved unusual difficulties. The reduction of the excrescence was effected in three treatments at intervals of about three weeks, the process being unusually tedious for the size of the spur because only six-minute applications, with from ten to twenty-five milliampères, were employed, unusual care being necessary, on account of the adjoining deviation of the sæptum, not to produce a perforation. It has been wisely alleged as a disadvantage that perforation is especially liable to result from electrolysis; but this case satisfied me that it could be avoided by proper care in any case in which it would be avoidable by the surgical method.

The result was satisfactory; by the removal of the excrescence without interference with the deflection, enough space was gained for comfortable respiration.

Case III of Type I was quite an elderly gentleman, who was under treatment for nasal polypi. A cartilaginous excrescence, which prevented the ready transmission of light and the passage of instruments to the seat of polyp growth, was effectively reduced by electrolysis. His age and somewhat feeble condition led to the adoption of this substitute for the surgical method in his case. His was the only one of the ten cases in which there was any noticeable reaction after the treatment. His temperature rose slightly, he complained of heat, pain, and tenderness of the nose, and of a sense of malaise and headache for a day or so.

Case IV of Type I was a small cartilaginous excrescence with which I might not have deemed it necessary to interfere by the surgical method, yet the patient is much improved by its reduction. The only noteworthy feature is that the slough did not separate as a whole, but seemed to liquefy and be in part discharged and in part absorbed, without complete destruction of the mucous membrane, which has therefore been reproduced more perfectly than is usual after the cutting operation. This is an advantage, as the tendency to incrustation so frequently observed after the surgical method due to the poor quality of reproduced mucosa will be avoided. It is an advantage, however, which does not invariably follow electrolysis, since if the slough produced be large it will separate as a whole, with corresponding complete destruction of the surface mucosa.

Case V of Type I presented no features not already noted in connection with the others.

Type II. Mixed Cartilaginous and Bony Spurs.

Case VI.—Mr. M. J. H., aged twenty-five years, has lived in Colorado for two years on account of suspected incipient pulmonary tuberculosis, but has now resided in Chicago again for a year and a half. Maternal grandfather, mother, and sister died of tuberculosis. The physical signs and general condition indicate tuberculosis in a comparatively quiescent or arrested state. He now complains especially of nasal obstruction and consequent irritation of the throat, which is due to hypertrophic rhinitis aggravated by a sæptal spur. This excrescence is of the kind which commences anteriorly and runs upward and backward, following the sutural line of the vomer and cartilaginous plate of the sæptum, gathering volume and thickness and terminating opposite the middle turbinal, into which body its point presses, reaching at this plane quite across the nasal space.

March 1st.—The same needles as were used in Case I were inserted into the projecting point of this excrescence. They met bone and could not be inserted as deeply as desired. The controller was adjusted gradually as in Case I to a maximum electro-motive force of thirteen volts, at which time the current registered from twenty to thirty-five milliampères, the action being maintained for seven minutes. The patient is uncomplaining, and he regarded the pain as trivial. No hæmorrhage.

6th.—He suffered no discomfort after the treatment. The excrescence point is soft and smaller.

19th.—The spearlike point of the excrescence having been destroyed, a second application was made in like manner to the part of the ridge next adjoining anteriorly.

April 30th.—The final result is fairly satisfactory, the spur being very much reduced in prominence, but not wholly removed. Both cartilage and bone entered into its composition, and the reduction in volume was probably commensurate with the proportion of cartilage contained in it.

Doubtless a flatter surface might have been made by the surgical method, but on account of the latent tuberculous state of this patient one would not have wished to risk either the shock or possible hæmorrhage of the surgical method.

Case VII.—Mr. H. had a spur similar in location and composition to the last described; only the anterior lower part of it, however, yielded to electrolysis. The larger part of it proved to be of bone, which was unaffected by the treatment. Slight improvement only.

In one other case of this type the treatment is not yet completed, but the indications point toward a partial reduction only.

Type III. Bony Spurs.

Case IX.—Mr. E. R., aged nineteen years, has been under treatment for hypertrophic rhinitis, adenoid vegetations, and hypertrophy of the tonsils, which are now remedied. He has also a sæptal spur of the kind which commences anteriorly and runs upward and backward, terminating opposite and projecting into the middle meatus of the right side.

March 20th.—Electrolysis applied to the spur—eleven volts, twenty milliampères, for four minutes—when the patient so nearly fainted that it was necessary to discontinue the treatment. The needles would not penetrate thoroughly into the spur, the bone seemingly being of ivorylike hardness.

April 27th.—The spur is practically unchanged, and electrolysis again attempted, the method with two lamps in the circuit for the more gradual application of the current being selected. This treatment was also a failure, for the needles could not be made to penetrate adequately, and besides the patient nearly fainted after three minutes of a current of only eight volts and ten milliampères. A subsequent effort to insert steel needles into this spur resulted in failure.

Case X of Type III was a similar bony spur in which, failing to get a proper insertion of the needles, the process by electrolysis was abandoned and the surgical method substituted.

Conclusions.—1. As demonstrated by the cases reported under Type I, strictly cartilaginous spurs can be thoroughly removed by electrolysis—one, two, or at most three operative sittings being required. It is more tedious and less brilliant than the surgical method, but is not accompanied by any liability to immediate hæmorrhage and by only a remote possibility of secondary hæmorrhage. It is not to be indorsed as a universal substitute for the surgical method in even this limited class; but the number of individual cases, both in this type and in Type II, for which it is applicable is large, and with the efficiency, convenience, and compactness of the McIntosh current controller which adapts the Edison electric circuit to its use, together with properly constructed irido-platinum needles, I consider it a valuable addition to our resources.

2. As demonstrated by the cases reported under Type II, it will not thoroughly remove spurs which belong to that large class of mixed cartilaginous and bony substance; but it will reduce them in size, the amount of reduction being commensurate with the proportion of cartilage of which they are composed. The majority of such cases would therefore better be treated surgically, as being the more thorough method; but instances will arise in which the surgical method being declined or being for some reason inexpedient, benefit may accrue from the use of electrolysis.

3. As demonstrated by the cases reported under Type III, spurs composed wholly or largely of hard bone can not be successfully treated by electrolysis, for the reason that needles can not be caused to penetrate properly, and further, it is doubtful if the process is adequate, even if the needles should penetrate, to the resolution of hard and dense bone.

4. Spur or excrescence, and not deviation of the sæptum, is the subject of this paper. Electrolysis is powerless to correct deviated sæpta of any form.

34 Washington Street.

A CASE OF SARCOMA OF THE NECK
INVOLVING THE TONSIL AND CAUSING DEAFNESS IN A BOY SEVEN YEARS OF AGE.*

By GORHAM BACON, M. D.

Charles B., aged seven years, was first seen March 16, 1895. The history of the case was that five weeks ago the child complained of pain in the neck just below the left ear, and that in ten minutes' time a swelling suddenly appeared as if an effusion of blood had taken place.

Examination.—The tumor is moderately hard and tense, but not painful. Behind the ear the skin is a little red. There is a small quantity of blood in the external auditory canal and the inferior wall of the same is bulged upward somewhat; drumhead swollen and bulging; watch heard $\frac{0}{56}$.

The patient was not seen again till March 26th, and during this time the tumor had increased markedly in size, being at the present time hard, irregularly lobulated, and extending from the middle of the mastoid process to the junction of the middle and lower thirds of the sterno-mastoid muscle almost to the angle of the jaw. Its elevation at the highest point, just below the mastoid tip, is two centimetres; no vessels are visible on its surface and the skin moves freely over it; there is no bruit heard on auscultation; no tenderness on palpation. The left tonsil is quite regularly enlarged, filling one half of the pharynx, and is only slightly reddened, but is hard and not tender; heart and kidneys are normal. The patient's appearance is good and he feels well otherwise. He was shown before the New York Otological Society at one of its meetings, and the general opinion of those present was that it would be advisable to etherize the patient and make an exploratory incision in the growth. This was done on March 28th. With a hypodermic needle a drop of saneous fluid was withdrawn from the centre of the tumor, but under microscopical examination this did not contain any pus cells. An incision was then made through the skin and fascia seven centimetres downward and forward from the centre of the mastoid, and a portion of the growth removed and examined under the microscope. At the time it was thought by Dr. Weeks to be a lympho-sarcoma. It was found impossible to remove the growth on account of its size and the important structures involved; so, after excising a portion—2·5 centimetres by 1·5 centimetre—for microscopical examination, the wound was sutured.

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* Read before the American Otological Society at the annual meeting held at New London, Conn., July 16, 1895.

March 29th.—The temperature immediately rose after the operation; there is marked diarrhœa; patient restless; there is much swelling of the tissues anterior to the tumor, with tenderness and local heat.

30th.—Swelling of the tissues about the growth very marked, extending as high as the upper parotid region; breathing difficult.

Dr. W. B. Coley kindly saw the patient at 3.30 P. M., and, although he did not think that a cure could be effected in such an advanced case of sarcoma, advised injecting the toxines of erysipelas and the *Bacillus prodigiosus*, beginning with one minim and gradually increasing the dose. He injected one minim at this time into the growth in a direction downward and forward. At 5 P. M. the temperature had risen to 104° F., which was evidently caused by the injection of the toxines. Just before the injection the temperature was 100·2° F.

31st.—Swelling about the tumor very marked, breathing more difficult, and speaking impossible. Temperature at 6 A. M., 99·1° F.; 12 noon, 102·6°; 9 P. M., 100·1°. Patient very restless; lungs show no disease; heart muscle weak. It was necessary to give the patient whisky, strychnine, and digitalis at repeated intervals. An injection of one minim and a half was made at 10 P. M. into the same portion of the tumor.

April 1st.—Patient's breathing and pulse better; odor from the wound very fœtid; sutures removed. The wound has a pink and glazed appearance and the edges of the same are sloughing. Toxines, two minims, injected at 9 P. M. Temperature at 9 A. M., 99° F.; 12.30 P. M., 103·8°; 9 P. M., 102°.

2d.—Swelling less marked; the boy breathes more easily, is brighter, and talks some. Odor from the wound very fœtid. The temperature has fluctuated from 101·2° to 104·6° F.

3d.—He is less restless and eats much better. Less swelling about the growth. Diarrhœa continues, stools being greenish and odor very fœtid. Toxines, two minims and a half, injected at 3 P. M.

4th.—The patient's condition has improved and he takes plenty of nourishment. There is a softening in the growth just anterior to the tip of the mastoid. A microscopical examination made to-day by Dr. J. E. Weeks showed it to be a sarcoma instead of a lympho-sarcoma. Toxines, three minims, injected at 10 P. M.

5th.—The boy had a short but distinct chill thirty minutes after the injection last night, the temperature reaching 105·8° F.; no sweating. Two soft spots were found in the tumor, one at the point of injection two centimetres downward and forward from the angle of the jaw, the other in the posterior portion of the tumor. There is no tendency of the wound to heal.

6th.—Softened area increasing. Toxines, two minims, at 10 P. M.

7th.—Chill at 8.30 A. M.; temperature 105·8° F. following, but no sweating. Aspiration shows pus in the softened areas. Chloroform administered and an incision made into each abscess, and one ounce and a half of thick yellowish pus evacuated from the posterior one, and an ounce of pus of the same character, from the anterior one. These abscesses do not communicate nor does either communicate with the wound made at the first operation, when an attempt was made to extirpate the growth. They apparently have formed at the expense of the tumor, which is in consequence undoubtedly smaller.

8th.—Discharge from the abscess slight, but a very free and offensive discharge comes from a sinus running six centimetres downward, forward, and inward from the bottom of the wound made at the first operation. The wound is dressed frequently. No further points of fluctuation can be detected anywhere. Chills are becoming frequent, followed by high temperature, but there is very little sweating. Left facial paralysis discovered to-day. Drumhead perforated, but no discharge in the canal.

9th.—Condition of patient very serious; pulse very rapid and weak; rapid breathing.

10th.—At 7.55 A. M. he had a severe hæmorrhage from the mouth and nose, the blood being arterial and undoubtedly coming from the tonsil. He died at 8.10 A. M. No autopsy could be obtained.

The history of the case—viz., the rapid and sudden appearance of the tumor, the absence of all pain and tenderness—led me at first to believe the growth to be a hæmatoma. On the second visit, however, the tumor had increased in size very considerably, and had become lobulated and was harder, suggesting malignancy. This proved to be the case after microscopical examination.

Dr. W. B. Coley, in the *Medical Record*, has reported a number of cases of sarcoma as having been cured by the use of the toxines of erysipelas and the *Bacillus prodigiosus*. Some writers agree with him as to the value of this method of treatment, while others have not met with much success.

As this case was a desperate one, and extirpation was impossible on account of the deep structures involved, almost any plan of treatment that held out a ray of hope seemed justifiable, and the injection of the toxines caused a decided decrease in size of the tumor. Before expressing any opinion as to the value of the toxines in cases of sarcoma, it would seem to me necessary to commence the treatment before the case had advanced to such an extent as the one just reported, and also where an attempt at extirpation had not first been made.

It was unfortunate that an autopsy could not be obtained in order to determine the extent and possibly the origin of the sarcoma. It may have started in the pterygoid process of the sphenoid bone or the tonsil, or even in the temporal bone, as the drumhead was perforated and there was marked deafness on the side affected.

I am indebted to Dr. Coley for supplying me with the toxines, which were prepared according to his method.

A CASE OF MORTON'S METATARSALGIA.

NEURITIS; EXSECTION OF JOINT; CURE.

By O. T. OSBORNE, M. D.,
PROFESSOR OF THERAPEUTICS AT YALE, NEW HAVEN, CONN.

In November, 1893, a young woman, about twenty-five years of age, came under my care, complaining of pain in the right foot, with a feeling of numbness in, and often a cramping of, the fourth toe. The pain was increased by walking and going down stairs, and, when sitting still, often the shoe must be removed to relieve it. The pain was of a sickening, boring character, often shooting around the ankle and up the leg.

The history of the patient was as follows: In December, 1892, she had slipped on a piece of coal, turned her ankle, and fallen on her right hip with the foot twisted under her. For a week she walked with difficulty, due to the strain and soreness of the whole leg. About one month afterward—viz., in January, 1893—she had a cerebro-spinal meningitis, during which both ankles became stiff and the leg muscles contracted, so that the feet were turned in and down, greatly out of shape. On recovery, after remaining in bed nearly two months, she was hardly able to walk, owing to the stiffened ankle joints, and to the contractures of the muscles of the legs.

In June, 1893, she was first able to walk well, but typhoid fever again put her to bed in the latter part of July, and kept her there until she first went out in October. At this time the right foot began to pain her badly, was numb, and caused her trouble in walking.

In November, when she first came to me, as above stated, I found almost total anæsthesia of the fourth and fifth toes of the right foot, and slight anæsthesia of the skin along the course of the external plantar nerve. There were also tender points along the course of the sciatic nerve and in the popliteal space.

The diagnosis of neuritis in a subacute stage was made. Electrical treatment was started, and quickly, by the constant current, the anæsthesia disappeared; as for the pain, the interrupted current always caused a diminution of it, but the periods of absence of pain were always irregular and evanescent.

The pain was always increased by walking or going up and down stairs. All medicinal treatment utterly failed, and at times there was a great deal of sciatic pain, even to the hip, and often in the knee.

Every resource was tried to cure the patient, but the only relief, or rather the only treatment that seemed to prevent the pain from being unbearable, was the constant current, to reddening of the skin, over the painful points of the sciatic nerve, and the interrupted current to the foot and toes. This treatment was continued at short intervals until October, 1894, during all of which period walking was always more or less painful and the shoe *must* be loosened or actually removed, at almost any place, be it church or theatre, if she had sat quietly for a time. Morton maintains that this compelled removal of the shoe is a diagnostic sign of this metatarsalgia.

In October, 1894, after some unusual amount of going up and down stairs, and after several previous aborted attacks, a violent ascending neuritis of the sciatic nerve started up. This was the most violent and intensely painful sciatic neuritis that I have ever seen.

The fixation splint from the heel to the axilla was constantly kept in place, with occasional removals for the relief of pressure points and for the reapplication of cotton and flannel for dry warmth. Hot sand bags were constantly used about the leg, as dry heat diminished the amount of the pain.

During the paroxysms of pain always, and constantly for four weeks, hypodermics of morphine in enormous dosage were given. Nothing else was of any avail.

For five weeks these paroxysms occurred almost daily, and at these times individual muscles or groups of muscles of this (right) leg would be thrown into contractions, both clonic and even tonic in character. Often these contractions would affect the back and abdominal muscles on the right side, and even opisthotonus often occurred. These convulsions of the leg and hip muscles caused excruciating pain, as every twist or pull would injure the inflamed sciatic nerve, so that the patient begged for the attendants to hold the leg still, as even in the splint the joints were slightly moved by the muscular spasm.

At any time if the splint was momentarily removed the toes and foot flexed spasmodically toward the plantar surface, always causing agonizing pain.

Nothing stopped these spasmodic, convulsive paroxysms but inhalations of chloroform to partial anæsthesia and kept up for half an hour at least. Then relaxation enough would occur for the powerful hypodermics of morphine to take hold. Enough morphine, without endangering the life of the patient, could not be given to prevent these paroxysms, although three grains were often given in a night, and frequently one grain and three fourths at one dose, and that to a patient who had never taken morphine up to the time of this acute neuritis. All of the surface of the foot and leg receiving nervous filaments from the external plantar and posterior tibial nerves was anæsthetic, but any movement or any pressure that would affect any part of the sciatic nerve would cause intense pain and perhaps precipitate a paroxysm.

During this attack of neuritis the most painful region, and the point that could not bear even the touch of a finger, was on the sole of the foot at the joint of the metatarsal bone and proximal phalanx of the fourth toe.

As here was the point of most intense pain, and as injury to this part by walking and going down stairs could be the cause of the traumatic ascending neuritis which I decided that she had, I concluded that there was either a neuroma at this point or that she had Morton's metatarsalgia as the cause of the whole trouble, and that only surgical interference could ultimately cure the patient. I at this time stated my opinion to the family, and the subsequent operation proved the condition to be that described by Morton.

In seven weeks the acute stage had passed and the patient was about on crutches, as the muscles supplied by the posterior tibial nerve were paralyzed as well as the fourth and fifth toes. The skin supplied by the posterior tibial and the external plantar nerves was anæsthetic, while movement of the ankle joint was very painful.

With massage and electricity the sensation became normal, and the paralyzed muscles of the leg returned to normal action by about January 15, 1895.

But now again we had the same old plantar neuralgia, and the same aching toes and leg, and the same inability to walk.

As, soon, a threatening sciatic pain after a little extra use of the foot compelled me to send her to bed for three or four days, I called in Dr. William H. Carmalt as consultant, as I desired surgical interference. Dr. Carmalt agreed with me as to the trouble being Morton's neuralgia, and exsection of the joint was decided upon.

The operation was performed by Dr. Carmalt in March, 1895, and was perfectly successful.

From that date up to the present time there has been entire and complete absence of pain from the toes, foot, leg, and thigh.

There has been no pain on walking or going down stairs, and no cause to remove the shoe.

The atrophy of the leg, which had in considerable measure persisted since the attack of neuritis, has entirely disappeared.

The St. Louis College of Physicians and Surgeons.—Dr. Frank Parsons Norbury, the editor of the *Medical Fortnightly*, has been elected professor of practice of medicine and clinical medicine.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, AUGUST 31, 1895.

GUAIACOL INHALATIONS IN GANGRENE OF THE LUNGS.

A new use for the remarkable medicament, guaiacol, and one that promises to be of great importance, is that of mitigating the foul odor of the breath and the sputum in cases of pulmonary gangrene. The *Union médicale* for August 10th contains an article on the subject by M. Richardière. In this disease, he says, the odor of the breath and of the sputum is as harmful for the patient as it is disagreeable for those around him. The offensiveness of this odor, which exists in all degrees and in all forms of the disease, is of prime importance in the benign forms—those that are curable, although their natural progress toward recovery is frequently very slow. Aside from the personal annoyance of this odor, it is prone to cause a distaste for food and consequent serious impairment of nutrition. In such a debilitating and cachectic disease as pulmonary gangrene it is of the first importance that the patient's strength should be maintained, and if failure of appetite and distaste for food are caused by this odor, every means should be employed to destroy it, or at least to diminish it.

From this point of view the various antiseptic liquids employed as gargles are invaluable, although, unfortunately, their effect is not lasting. Antiseptics prescribed for internal use are insufficient and really not efficacious for disinfecting the respiratory tracts. Quinine sulphate and salicylic acid have no action on the offensiveness of expired air. The solution of sodium hyposulphite, prescribed by Lancereaux in the dose of sixty grains, gives rather favorable results, but it does not completely destroy the offensive odor. In order to accomplish this, says the author, it is necessary to employ an antiseptic gas or a volatile antiseptic which will penetrate the bronchial tubes without endangering the mucous membrane of the air-passages. Guaiacol appears to be indicated for this purpose, as its very strong odor almost completely masks that of pulmonary gangrene. It has the further advantage of acting on the profuse bronchial secretions which accompany the process of sphacelus. The inhaled vapor, too, may penetrate as far as the sphacelous portion of the lungs and exert a local antiseptic action. The action of guaiacol in pulmonary gangrene, says M. Richardière, is not merely hypothetical. In two patients attacked with this disease he has seen inhalations of guaiacol almost completely destroy the odor under conditions in which it was impossible not to recognize the efficacy of the drug.

The method of giving the inhalations is very simple and does not require complicated instruments. The apparatus of which M. Richardière has made use is the oxygen inhaler commonly employed in hospitals. The inhalations are given as often as possible, every ten minutes when practicable, and the inhaled vapor should be left in contact with the air-passages as long as possible and rejected by slow and prolonged expirations. In this procedure, says the author, the oxygen is only an accessory and may be replaced by atmospheric air. The author used it because it seemed especially indicated as a vehicle of guaiacol in combating dyspnœa and facilitating respiration, which were important indications in a disease where often a large proportion of the pulmonary parenchyma is rendered incapable of taking part in hæmatosis.

M. Richardière relates the cases of two patients which show, he says, the favorable influence of the inhalations on the offensive odor of this disease. In the first case the patient was attacked with the cortical pulmonary gangrene described by Corbin. The expectorated putrid matter had the characteristic odor. About forty-eight hours after beginning the inhalations the sputa lost their offensive odor, although the local lesion remained the same. Three weeks later, when the inhalations were discontinued, the odor returned almost immediately, but ceased again on employing the guaiacol inhalations anew. The second case was in every respect like the first, both as to the course of the disease and as to the treatment.

These two cases of pulmonary gangrene, says the author, were of a benign nature, and would eventually have ended in recovery, whatever the treatment might have been. It does not seem to him, moreover, that the guaiacol had a marked effect on the anatomical lesion, and in no case did it diminish the expectoration or modify the local symptoms. Nevertheless, in spite of its limited action, the favorable results in regard to the offensive odor of this disease, he says, are not to be disregarded, and for this reason inhalations of this drug should be recommended in the symptomatic treatment of pulmonary gangrene.

MINOR PARAGRAPHS.

THE *INDEX MEDICUS.*

The account which will be found elsewhere in this issue of the subscriptions that have been received by Dr. Billings, which are to be added to those we have acknowledged as having been received by us from time to time, is gratifying, for it seems to indicate that the medical profession of the United States is determined that the *Index* shall be revived. However, as we have said before, whatever is to be done must be done quickly, for already an announcement is out that a work of similar scope, confessedly owing its origin to the suspension of the *Index Medicus*, is to be undertaken in France by Dr. Marcel Baudouin. If that is fairly started before our *Index* is really revived, there will be many, it is to be feared, who will think that one such work is enough, and will cease to concern themselves with the resuscitation of the American original. They will be mistaken, of course, because no index of medical literature will be of much use to the great body of English-speaking physicians unless it is printed in English. There is room for Dr. Baudouin's projected work, and the world will be glad to see it accomplished, but for all that we must have our *Index Medicus* again in English. We again appeal to all our readers to help along in the work of its restoration. Anybody who can not afford an individual subscription of twenty-five dollars annually may associate himself with others in a joint subscription. In this or some such way every American physician with literary proclivities ought to help along in the good work.

THYREOID EXTRACT IN THE TREATMENT OF UTERINE FIBROMA.

At a recent meeting of the *Académie des sciences*, a report of which appears in the *Mercredi médical* for July 31st, M. Jouin stated that he had employed thyreoid extract for patients suffering with fibrous tumors of the uterus. The dose was from four to eight tablets a day, each containing two grains and a half of the extract. In three cases he had observed a diminution of the hæmorrhage and in two cases the partial disappearance of the tumor. He thought that researches should be pursued in regard to this method of treatment, although our present knowledge of the physiology of the thyreoid gland enabled us to give only very hypothetical explanations in regard to the action of the thyreoid juice in the treatment of fibrous bodies.

A NEW JOURNAL OF HYGIENE.

We have received one of the early numbers of *Hygeia*, a monthly journal published in Tyler, Texas, and edited by Dr. T. J. Bell and Dr. F. G. Kirkscey. Hygiene seems to be its chief field, although a subtitle indicates that it is devoted to preventive and curative medicine. The contents of the number before us are varied and interesting.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 27, 1895:

DISEASES.	Week ending Aug. 20.		Week ending Aug. 27.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	28	1	34	9
Scarlet fever	30	1	33	5
Cerebro-spinal meningitis	0	0	3	3
Measles	113	8	99	11
Diphtheria	128	13	119	33
Small-pox	1	0	0	0
Tuberculosis	126	107	153	127

Medical Practice in New Mexico.—In 1882 there was adopted by the Legislature of New Mexico, and approved, a statute regulating the practice of medicine, its details resembling those of the statute of Illinois then existing. As it was unsatisfactory to the medical profession and adversely criticised by the bar, various futile efforts were made by the New Mexico Medical Society to secure a better statute. In September, 1894, the Territorial Board of Medical Examiners, in session at Albuquerque, appointed a committee of three of its members, who, with the president of the board and the president of the New Mexico Medical Society, should prepare a bill looking to a better statute. In January, 1895, such a bill was ready and, having met with the approval of a majority of the board, and of the officers of the New Mexico Medical Society, was presented to the Legislature, then in session. It became a law, but in its passage received several unnecessary alterations, which are indicated in the following reprint by the sentences in Italics. An attempt was made in drafting this bill to make use of the best materials from kindred statutes throughout the United States, as well as considerable local experience.

"An Act to Regulate the Practice of Medicine and to Establish a Territorial Board of Health in the Territory of New Mexico. Approved February 27, 1895.

"*Be it enacted by the Legislative Assembly of the Territory of New Mexico:*

"Section 1.—Qualifications for Practice. That no person shall practise medicine in any of its departments in this Territory unless such person possesses the qualifications required by this act. If a graduate in medicine, he must present his diploma by mail or in person to the Territorial Board of Health for verification as to its genuineness.

"If the diploma is found genuine and from a legally chartered medical institution in good standing, and if the person named therein be the person claiming and presenting the same, the Territorial Board of Health shall issue a certificate to that effect, signed by all the members thereof, and such certificate shall be conclusive as to the right of the lawful holder of the same to practise medicine in this Territory. If not a graduate, the person practising medicine in this Territory shall present himself before said board and submit himself to such examination as the board may require, and if the examination be satisfactory to the board, the said board shall issue its certificate in accordance with the facts, and the lawful holder of such certificate shall be entitled to all the rights and privileges herein mentioned. *Provided, That any person who shall have practised medicine continuously for the period of ten years in this Territory prior to the passage of this act, shall be entitled to a license or certificate, without examination, upon the payment of the fee for such license or certificate.*

"Section 2.—Territorial Board of Health—Organization. That a board is hereby established which shall be known under the name and style of the New Mexico Territorial Board of Health, to be composed of seven practising physicians of known ability and integrity, who are graduates of medical schools of undoubted respectability, and holding licenses to practise in this Territory, giving each of the three schools of medicine (known as the regular, homœopathic, and eclectic schools) a representation as follows, to wit: Four (4) physicians of the regular, two (2) of the homœopathic, and one (1) of the eclectic school or system of medicine. The members of this board shall be appointed by the Governor and shall hold their office two years, and all vacancies shall be similarly filled as soon as the Governor is notified thereof by the secretary of the board.

"The Territorial Board of Health shall organize within three months after the passage of this act; it shall procure a seal, and shall receive through its secretary applications for certificates and examinations; the president and secretary shall have the authority to administer oaths, and the board shall take testimony in all matters relating to its duties; it shall issue certificates to all who furnish satisfactory proof of having received diplomas or licenses from legally chartered medical institutions in good standing as may be determined by the board. Applicants for certificates being graduates *or to all who now have licenses to practise in the Territory issued by the present and former Board of Medical Examiners*, shall pay a fee of five (5) dollars to the secretary of the board, who shall turn the same into the treasury of the board.

"Section 3.—Verification of Diploma—Affidavit. The verification of the diploma or certificate shall consist in the affidavit of the holder and applicant that he is the lawful possessor of the same and that he is the person therein named, and any person swearing falsely shall be deemed guilty of perjury and shall be punished accordingly.

"Section 4.—EXAMINATIONS BY THE BOARD. All examinations of persons, not graduates or licentiates, shall be made directly by the board, and may be made in whole or in part in writing, and shall be of an elementary and practical character, sufficiently strict to test the qualifications of the candidate as a practitioner. The fee for examination shall be twenty (20) dollars, and said fee shall be paid into the treasury of the board.

"Section 5.—COUNTY CLERK TO RECORD. Every person holding a certificate from the Territorial Board of Health shall have it recorded in a book provided for the purpose in the office of the clerk of the county in which he resides, within three months from its date, and the date of recording shall be indorsed thereon; he shall then be entitled to practise in any part of the Territory, but must again record his certificate in case of removing his permanent residence to another county.

"Section 6.—REFUSAL OR REVOCATION OF CERTIFICATE. The Territorial Board of Health must refuse to issue certificates to individuals guilty of unprofessional or dishonorable conduct, and it may revoke certificates for like causes.

"Section 7.—DEFINITION OF TO 'PRACTISE MEDICINE.' For the purposes of this act, the words 'practise medicine' shall mean to investigate or diagnose, or offer to investigate or diagnose, any physical or mental ailment of any person, with a view to affording relief, as commonly done by physicians; to suggest, recommend, prescribe, or direct, for the use of any person any drug, medicine or appliance, apparatus or other agency, whether material or not material, for the cure, relief, or palliation of any ailment or disease of the mind or body, or for the cure or relief of any wound, fracture, or bodily injury or deformity, after having received or with the intent of receiving therefor, either directly or indirectly, any bonus, gift, or compensation: *Provided, this act shall not prevent people who are entitled to sell medicines under the laws of this Territory from recommending the same*, but nothing in this act shall be construed to prohibit gratuitous service in cases of emergency or the domestic administration of family remedies, or women from practising midwifery; and this act shall not apply to surgeons in the service of the United States in the discharge of their official duties.

"Section 8.—PENALTY FOR PRACTISING WITHOUT CERTIFICATE—USING ANOTHER'S DIPLOMA. Any person practising medicine or surgery in this Territory without the certificate issued by this board in compliance with the provisions of this act shall for each and every instance of such practice forfeit and pay to the Territory of New Mexico for the use of the said Territorial Board of Health the sum of one hundred (100) dollars for the first offense and two hundred (200) dollars for each subsequent offense, the same to be recovered in an action of debt before any court of competent jurisdiction; and any person filing or attempting to file as his own the diploma or certificate of another or a forged affidavit of identification, shall be guilty of a felony, and upon conviction shall be subject to such fine and imprisonment as are made and provided by the statutes of the Territory for the crime of forgery.

"Section 9.—JUDGMENT UPON CONVICTION—APPEAL. Upon conviction of either of the offenses mentioned in this act, the court shall, as part of the judgment, order that the defendant be committed to the common jail of the county until the fine and costs are paid, and upon failure to pay the same immediately the defendant shall be committed under said order. Provided, that either party may appeal in the same time and manner as appeals may be taken in other cases, except that where an appeal is prayed in behalf of the Territory, no appeal bond shall be required to be filed, whether the appeal be from a justice of the peace, or from the district, county, or circuit court, or from the appellate court, but it shall be sufficient in behalf of the Territory of New Mexico for the use of the Territorial Board of Health to pray an appeal, and thereupon appeal may be had without bond (or) security.

"Section 10.—SOLICITOR GENERAL AND DISTRICT ATTORNEYS TO PROSECUTE. It shall be the duty of the Solicitor General and the District Attorneys to prosecute any and all persons who shall be guilty of violating the provisions of this act.

"Section 11.—REPEAL. All laws and parts of laws in conflict with the provisions of this act are hereby repealed, and this act shall be in force and effect from and after its passage."

The Territorial Board of Health consists of Dr. W. R. Tipton, president, of Las Vegas; Dr. G. S. Easterday, vice-president, of Albuquerque; Dr. Francis H. Atkins, secretary, of East Las Vegas; Dr. J. H. Sloan, treasurer, of Santa Fé; Dr. W. Eggert, of Santa Fé; Dr. J. J. Shuler, of Raton; and Dr. J. M. Cunningham, of East Las Vegas.

It is announced that an examination will be required from all applicants to practise medicine in New Mexico who shall graduate after July 1, 1897, from any medical college not requiring preliminary examination of its matriculates or equivalent evidence of satisfactory general education, and, for graduation, evidence of four years' study of medicine and four terms of lectures occurring in four separate years. Meanwhile, the present standard of three years' study, three terms of lectures in three separate years, and a preliminary examination of matriculates will be maintained with all applicants who have graduated since July 1, 1890.

The American Electro-therapeutic Association.—The fifth annual meeting will be held in Toronto, Canada, on September 3d, 4th, and 5th, under the presidency of Dr. Lapthorn Smith, of Montreal. Besides the president's address, the programme includes the following papers: Further Studies of the Physiological Effects of the Sinusoidal Current and a Description of a Perfected Apparatus for Producing both a Sinusoidal and a Direct Galvanic Current, by Dr. J. H. Kellogg, of Battle Creek, Mich.; The General Therapeutic Effect of the Alternating Current of High Frequency and of High Tension, by Dr. G. Apostoli, of Paris, France; Alternating Dynamo Currents in Therapeutics, by Dr. W. J. Herdman, of Ann Arbor, Mich.; Cataphoresis—Non-conducting Drugs—Fluids may be diffused by Employing Conducting Electrodes in Solution, by Dr. W. J. Morton, of New York; Further Successes in the Treatment of Neuralgias by Cocaine Cataphoresis, by Dr. Frederick Peterson, of New York; Some Comments upon Cataphoresis in Throat and Dental Diseases, with the Exhibition of an Improved Galvanic Current Adapter, by Dr. W. C. Phelps, of New York; Zinc Amalgam Cataphoresis, by Dr. G. Betton Massey, of Philadelphia; Electricity in the Treatment of Heart Affections, by Dr. W. F. Robinson, of Albany; A Report on the Electrolysis of Cystic Goîtres, by Dr. C. R. Dickson, of Toronto, Canada; Gautier's Method of Electrolysis in Urethral Stricture, by Dr. Robert Newman, of New York; Electrotherapy as a Means of Diagnosis in Gynæcology, by Dr. G. Apostoli, of Paris; The Advantages of Electrical over Surgical Treatment, by Dr. F. H. Wallace, of Boston; Faradaism in Obstetrics, by Dr. R. J. Newman, of Savannah, Ga.; Oophoritis, and its Treatment by Electricity, by Dr. C. G. Cannaday, of Roanoke, Va.; The Apostoli

Treatment of Uterine Fibromata, by Dr. E. R. Corson, of Savannah; The Physiological Action of Periodic Induced Currents in Gynæcology, by Dr. A. H. Goelet, of New York; Notes on the Use of the Continuous Current in Arthritis Deformans, by Dr. H. S. Jewett, of Dayton, Ohio; The Value of the Sinusoidal Current as an Adjunct in the Treatment of the Acute Insanities, by Dr. Robert Safford Newton, of New York; Some Experiments with Static Electricity in Functional Diseases of the Nervous System, by Dr. Francis B. Bishop, of Washington, D. C.; A Current Controller for the Static Induced Current—A New Rheostat, by Dr. W. J. Morton, of New York; An Interrupted rather than a Continuous Douche in Franklinization—A New Form of Administration, by Dr. W. J. Morton; Hydro-galvanism of the Urethra, by Dr. Robert Newman, of New York; Electricity considered in its Relation to Surgical Gynæcology, by Dr. S. S. Phelps, of New York; Division of the Faradaic Current to Secure Intermitting Physiological Tetanus—A New Clock-work Apparatus, by Dr. W. J. Morton. Dr. Daniel D. Beaver, of Reading, Pa., will also read a paper.

The Index Medicus.—In a note dated August 22d Dr. John S. Billings incloses to us a list of subscriptions to the *Index Medicus*, in accordance with the subjoined form, which he had then received. This is exclusive of subscriptions sent to Mr. George S. Davis, the former publisher of the *Index Medicus*. When the physicians return from their summer vacation he hopes that this list will be largely added to.

List of Subscriptions for the Index Medicus received by Dr. Billings to August 21, 1895.

Albany, N. Y.—Dr. A. Vander Veer.

Brooklyn, N. Y.—Medical Society, County of Kings.

Cincinnati, Ohio.—Dr. P. S. Conner, Dr. F. Forchheimer, Cincinnati Hospital Library.

Denver, Colorado.—Colorado Medical Library Association.

Galveston, Texas.—Dr. J. P. Johnson.

London, England.—Royal College of Surgeons, England.

New Orleans, La.—Dr. S. E. Chaillé, Dr. John B. Elliot, Dr. Edmund Souchon, Dr. Rudolph Matas.

New York City, N. Y.—Dr. G. T. Jackson, Dr. J. S. Thacher, Dr. John A. Fordyce.

Philadelphia, Pa.—Dr. J. C. Wilson, Dr. William Pepper, Dr. De Forest Willard, Dr. S. Weir Mitchell, Dr. George M. Gould, Dr. H. C. Wood.

Quincy, Ill.—Quincy Public Library.

Richmond, Va.—Dr. Hunter McGuire.

Rochester, N. Y.—Dr. John O. Roe.

Salt Lake City, Utah.—Dr. S. H. Pinkerton.

Saranac Lake, N. Y.—Dr. E. L. Trudeau.

Washington, D. C.—Medical Department, United States Army, ten copies; Library Surgeon General's Office, two copies; Medical Department, United States Navy, two copies; United States Marine-Hospital Service, one copy.

Additional list of subscriptions for the *Index Medicus* received by Dr. Billings to August 23, 1895:

Baltimore, Md.—Dr. William Osler, Dr. H. A. Kelly, Dr. L. McLane Tiffany, Dr. I. E. Atkinson, Dr. W. S. Halstead, Dr. Henry M. Hurd.

Ogdensburgh, N. Y.—St. Lawrence State Hospital.

[Form.]

" ...., ..., 1895.

"The undersigned hereby agrees to subscribe for one copy of the *Index Medicus* for .. year. at $25 per year, subject to the following conditions—viz., When 200 subscriptions have been received by the editors the publication is to commence, and on notification of this I will send $25 to them. If, by December 1, 1895, the 200 subscriptions have not been obtained, the attempt to revive the publication will be abandoned.

" Address: { ....
....

" Address of Editors:
" Dr. J. S. Billings,
" Dr. Robert Fletcher,
" Library of the Surgeon-General's Office,
" Washington, D. C."

Dr. Henry L. Elsner, of Syracuse, N. Y., writes to us as follows: "You can enter my name among the subscribers for the *Index Medicus*, for which I will pay twenty-five dollars annually as soon as you call upon me for the same."

Dr. Henry W. Wandless, of Dallas, Texas, writes to us that he is much inclined to aid in the re-establishment of the *Index Medicus*, asking for information concerning the plan and usefulness of the publication, and requesting that he be furnished with a copy of it. He can probably obtain a copy by writing to Dr. John S. Billings, Surgeon-General's Office, U. S. Army, Washington, D. C.

Medico-Masonic.—The *Boston Globe* for August 25th gives portraits of Dr. George H. Kenyon and Dr. Freeman C. Hersey, and says:

"Sir Dr. George H. Kenyon, eminent grand lecturer of the grand commandery of Massachusetts and Rhode Island, is a native of Providence, is a Brown University graduate, and a graduate of the University of Vermont. He is a veteran of the war, and is surgeon general of the Rhode Island militia. Rising Sun Lodge, of East Providence, made him a Mason in 1875. He entered the grand lodge in 1881. He received the degrees of capitulary Masonry in Providence Royal Arch Chapter. In 1884–'85 he was commander of Calvary Commandery. Dr. Kenyon is a thirty-third-degree Mason, and in the Scottish Rite is commander-in-chief of the Rhode Island Consistory.

"Sir Freeman C. Hersey, M. D., eminent grand lecturer of the grand commandery of Massachusetts and Rhode Island, was born in Maine, is a graduate of Bowdoin, is fifty years old. He has practised in Pittsfield, Me., Salem, Mass., and is now settled in Boston. Dr. Hersey was made a Mason in Pacific Lodge, Exeter, Me., in 1867; received the royal arch degrees in Stevens R. A. Chapter, Newport, Me., in February, 1868; knighted in St. John's Commandery, 3, Bangor, Me., June, 1868; took the degrees in Salem Council, Royal and Select Masters, March 4, 1877; the ineffaceable grades, April 30, 1886, in Sutton Lodge of Perfection, Salem, Mass.; was elected and received the ancient traditional grades in Giles S. Yates Council, Princes of Jerusalem, October 8, 1886; philosophical and doctrinal grades, Mount Olive Chapter of Rose Croix, H. R. D. M., at Masonic Temple, Boston, October 15, 1886; and the modern historical and chivalric grades in Massachusetts Consistory, S. P. R. S., 32, Masonic Temple, Boston, December 24, 1886; and was created a sovereign grand inspector general of the thirty-third grade of the northern Masonic jurisdiction, September 20, 1892.

The Position of Quarantine Officer at Savannah.—Passed Assistant Surgeon J. H. White, of the United States Marine-Hospital Service, stationed at Stapleton, Staten Island, N. Y., writes to us as follows:

"Having been requested by the health authorities of Savannah, Georgia, to hold for them a competitive examination of candidates for the position of quarantine officer at that port, I will hold such examination at this hospital on Monday, September 3d, at 9 A. M. Examination open to all graduates of regular medical schools in good standing. No age limit is set, but preference given to men between twenty-two and thirty-five years of age. The position carries with it a salary of two thousand dollars per annum, and perquisites which amount to a few hundred dollars additional. I call this matter to your attention because you took such kindly interest in the previous examination, held in 1892, which resulted in the selection of a most capable officer. This officer now resigns to pursue his studies abroad. I state this in order that it may be seen that he has not been the victim of political influence, such influence being eschewed entirely in this matter, to the great gain of the city."

The Tri-State Medical Association.—The semi-annual meeting will be held in Cumberland, Md., on September 5th, under the presidency of Dr. S. S. Good, of Meyersdale, Pa. The programme includes the following papers: An address of welcome, by Dr. J. J. Wilson, of Cumberland; The president's address, by Dr. S. S. Good; Some Peculiarities of Nervous Diseases, by Dr. Percival Lantz, of Alaska, W. Va.; The Advantages of Torsion as a Means of Arresting Hæmorrhage, by Dr. J. B. Murdock, of Pittsburgh, Pa.; Shock—The Advisability of Immediate Operation after an Accident, by Dr. J. A. Twigg, of Cumberland; The Management of Labor, by Dr. M. G. Porter, of Lonaconing, Md.; The Mental Disturbances of the Climacteric Period in Women, by Dr. G. H. Rohé, of Baltimore; Electricity in General Practice, by Dr. A. Enfield, of Bedford, Pa.; Benzol Derivatives, by Dr. J. C. Bulloch, of Lonaconing, Md.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 24, 1895:*

BAGG, C. P., Assistant Surgeon. Detached from the U. S. Steamer Monterey and granted two months' leave of absence.

DICKSON, S. H., Surgeon. Detached from the Medical Examining Board and ordered to temporary duty in the Bureau of Medicine and Surgery.

PERCY, H. T., Passed Assistant Surgeon. Detached from the Washington Navy Yard and ordered to duty as member of the Medical Examining Board at Washington.

WILSON, H. D., Assistant Surgeon. Detached from the U. S. Steamer Monongahela, on arrival of that vessel at Annapolis, and ordered to temporary duty at the Washington Navy Yard.

Society Meetings for the Coming Week:

MONDAY, *September 2d:* New York Academy of Sciences (Section in Biology); Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society.

TUESDAY, *September 3d:* Mississippi Valley Medical Association (first day—Detroit); Medical Society of Virginia (first day—Wytheville); American Electro-therapeutic Association (first day—Toronto); Buffalo Medical and Surgical Association; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Franklin (quarterly), Herkimer (semi-annual), and Niagara (quarterly—Lockport), N. Y.; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, *September 4th:* Mississippi Valley Medical Association (second day); Medical Society of Virginia (second day); American Electro-therapeutic Association (second day); New York Academy of Medicine (Section in Public Health); Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Bridgeport, Conn., Medical Association.

THURSDAY, *September 5th:* Mississippi Valley Medical Association (third day); American Electro-therapeutic Association (third day); Tri-State Medical Associatinn (Cumberland, Md.); Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y. Obstetrical Society of Philadelphia; Cuyahoga, O., County Medical Society.

FRIDAY, *September 6th:* Mississippi Valley Medical Association (fourth day); Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, *September 7th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society, New York (private); Miller's River, Mass., Medical Society.

Births, Marriages, and Deaths.

Married.

GILBERT—CLAYTON.—In Silver City, New Mexico, on Tuesday, August 6th, Dr. Bartlett Gilbert and Miss Ella Clayton.

SLOCOMB—SEAVER.—In Leicester, Mass., on Tuesday, July 16th, Dr. George A. Slocomb, of Worcester, Mass., and Miss Florence W. Seaver, daughter of the Rev. Nathaniel Seaver.

Died.

TEBAULT.—In Norfolk, Va., on Tuesday, August 27th, Dr. A. G. Tebault, in the eighty-fourth year of his age.

Proceedings of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Ninth Annual Meeting, held in Niagara Falls, on Tuesday and Wednesday, May 28 and 29, 1895.

The PRESIDENT, Dr. L. BOLTON BANGS, of New York, in the Chair.

(*Continued from page 119.*)

Iodoform-ointment Injections in the Treatment of Suppurative Adenitis of the Groin.—Dr. JAMES R. HAYDEN, of New York, read a paper in which he described the following method of treating buboes, which he has found very satisfactory. The operative field having been shaved and rendered surgically clean, a few drops of a four-per-cent. solution of cocaine were injected beneath the skin where the puncture was to be made. The pus was then evacuated and thoroughly squeezed out through a small puncture. The abscess cavity was then injected with peroxide-of-hydrogen solution until the fluid returned practically clear. It was then washed out with a 1-to-5,000 bichloride-of-mercury solution and injected with a ten-per-cent. iodoform ointment. Next a cold bichloride dressing was applied with the idea of congealing the ointment. The patient should be kept quiet for forty-eight hours, although it was not necessary that he be confined to bed. The dressings were removed on the third or fourth day.

Dr. W. K. Otis, of New York, said that, while in many instances the method of treating buboes described by Dr. Hayden was the best, he had usually found that a single injection was not sufficient. Sometimes balsam of Peru was more efficacious.

Dr. Abner Post, of Boston, said that by merely evacuating the buboes through an aspirator, without injecting iodoform ointment or anything else, we might occasionally effect a cure. After evacuation, a firm spica bandage should be applied. No single method was applicable to all cases.

Dr. R. W. Taylor, of New York, said he employed the Fontan-Scott-Helm method of treating buboes with almost uniformly good results. Since he had adopted the plan of washing out the abscess cavity with peroxide of hydrogen better results had been obtained than before. The fact should be borne in mind that with syphilitic adenopathies there was sometimes a slight circumglandular infiltration which was apt to give rise to the sensation of fluctuation.

Dr. Bransford Lewis, of St. Louis, said that if enucleation was performed sufficiently early, when the skin was not very much involved, we could sometimes get almost primary union. In one instance he had succeeded in getting primary union on both sides. He had employed the injection method of treatment with varying success.

Dr. James Bell, of Montreal, said that in his experience the cases suitable for the injection method of treatment were comparatively rare. When there were broken-down glands or circumglandular ulceration, the injection method was quite unsuitable. Enucleation was not difficult, and the only objections to it were that it required the use of an anæsthetic and left a scar. The greater portion of the wound could usually be sutured.

The Infiltration Method of Local Anæsthesia in Genitourinary Surgery.—Dr. Lewis read a paper on this subject. He stated that in July, 1894, Dr. Schleich, at the German Congress of Surgeons, had detailed a new method of producing local anæsthesia by the use of intracutaneous injections of various drugs. Subsequently, in a monograph entitled *Schmerzlose Operationen*, the author had treated the subject more extensively, and given the results of its use in some three thousand operations, minor and major. The principle of the method consisted in injecting intracutaneously certain solutions and dissipating the sensibility of the peripheral nerves by the pressure of the infiltrated fluid, by the anæmia which it caused, and by the comparatively low temperature at which it was injected. The effects were produced by the fluid itself, rather than by any particular drug which it might contain. The drugs used were of only incidental importance.

In his various surgical procedures Dr. Schleich had found the following solution, of graded strength, to answer all purposes:

Cocaine hydrochloride.........	3 grains;
Morphine hydrochloride........	$\frac{1}{8}$ of a grain;
Sodium chloride................	3 grains;
Distilled water.................	3 ounces.

Mix, sterilize, and add three drops of a five-per-cent. solution of carbolic acid.

Two other solutions were used, but they were practically the same, the only differences being that in one the amount of cocaine used was reduced to a grain and a half, while in the other only a sixth of a grain of cocaine was employed and a twelfth of a grain of morphine.

Dr. Bryson referred to a case (reported in the *New York Medical Journal*, April 27, 1895) in which he had performed castration for prostatic overgrowth under cocaine anæsthesia. The patient had not felt the slightest pain. Of late, in operating about the bladder, especially in old men, he had been inclined to use cocaine anæsthesia in preference to chloroform or ether. He had had no experience with the solutions mentioned by Dr. Lewis. He had employed very dilute cocaine solutions, and the results obtained had not impressed him very favorably. He would prefer to use cocaine in cases where it was possible to first strangulate the parts by a ligature and so make sure that too much of the drug would not enter the general circulation too rapidly.

Dr. Chismore said he had twice performed perineal section under the use of very weak solutions of cocaine. In one of the cases the patient had stated that he felt no pain whatever. The second patient had complained very much of pain when the deeper tissues were handled.

Dr. Lewis said that in the method described the cocaine was added only to produce an immediate and not a permanent effect. We could employ this method in operating on the deeper tissues and in regions which could not be strangulated by a ligature. Schleich had employed it in performing nephrectomy.

The Seminal Vesicles.—Remarks on these organs by Dr. Eugene Fuller, of New York, were illustrated by numerous photographs of dissections made by the author, which tended to clear up various anatomical points that had before remained in doubt. The exact relation which the prostate bore to the seminal vesicles was shown, and from this relationship inferences relative to the mechanism of ejaculation were drawn. One of the most interesting photographs was that showing the interior of a seminal vesicle, together with its ejaculatory duct. This photograph showed that the cavity of the ampulla of Henle was shut off from that of the vesicle by a valvelike opening, and that the former was very small in comparison with that of the vesicle. By these anatomical demonstrations Dr. Fuller showed that his process of stripping the vesicles was capable of accomplishment, and that the material stripped out came from the vesicle and not from the ampulla. The author stated that the photographs, together with a full description, would shortly be reproduced in a book which he was preparing on the subject.

Epithelioma of the Penis.—Dr. W. N. Wishard, of Indianapolis, reported three cases, and exhibited a number of photographs illustrating the manner in which each had been dealt with. In two of the cases amputation had been done close to the scrotum. In the other the corpora cavernosa and the testes had been removed entirely, a small scrotal pouch being left to serve in the event of any subsequent necessity for plastic work. The mucous membrane of the urethra had been stitched to the margin of the skin. In all these cases the disease had advanced far back toward the scrotum at the time of the operation, but in neither of them had the inguinal glands been involved. The first patient had been operated on eight years ago, recurrence had taken place a year and a half later at the point of amputation, and the patient had soon afterward died. The second patient had been operated on over four years ago, and the third six months ago; in neither of these were there any signs of recurrence.

Dr. Bryson referred to a case of epithelioma of the testis in which the abdominal glands had become infected, while the inguinal glands were not at all involved, although the scrotum had become infected some months previous to the patient's death.

Dr. Taylor said that cancer of the penis usually centred itself in the inguinal ganglia, and even if the glands did not appear to be enlarged, they should be taken out, as they were often distinctly cancerous.

Dr. Chismore referred to a case of epithelioma of the penis reported by him last year in which he had removed only about a third of the glans penis and a few months later the glands in the right groin, which had become involved. About fifteen months after the amputation of the penis one of the glands in the left groin had become involved and been removed; the wound had never healed, and with the greatest rapidity there had sprung from that incision a large cauliflower-like growth which had attained to the size of a small cabbage. The patient had recently died. There had been no signs of recurrence in the right groin or at the point of amputation.

Dr. Lewis said the lines of infection in cases of cancer of the testes and of the penis were essentially different. In the former the direction of infection was in the iliac glands, while in cancer of the penis the glandular infection was always in the groin. He considered it desirable, when the penis was removed, to remove the testes also; otherwise, the stump of the penis rubbing against the clothing was apt to produce a certain amount of erethism, which increased the blood supply to the parts and might possibly act as a factor in causing recurrence of the disease.

Dr. Wishard said he was in favor of removing the testes in such cases.

The Treatment of Stricture of the Deep Urethra.—Dr. Paul Thorndike, of Boston, read a paper on this subject. He stated that, whatever might be our belief as to the curability of organic stricture of the male urethra, and whatever might be our prejudice for or against the operation of divulsion in any of its forms, or of internal urethrotomy, as applied to stricture of the deep urethra, it was probably true that the bulk of surgical opinion to-day was in favor of cutting from without in such cases of stricture of the deep urethra as could not be properly cared for by careful and gradual dilatation with graduated instruments. A very large percentage of cases of deep stricture needed operative interference of a kind more immediately efficacious than that which could be given by any form of gradual dilatation. Very many of these patients needed a cutting operation from without.

An external urethrotomy, properly performed, not only drained the bladder, but also attempted to cure or improve the strictured area itself by dividing the stricture. To accomplish this end the operation was always one of exactness and precision, and frequently one of great technical difficulty. The method of procedure which Dr. Thorndike stated he usually employed in these cases was to first perform an internal urethrotomy with the Maisonneuve instrument, and at once follow it by an external perineal urethrotomy. A filiform bougie was passed through the stricture, the Maisonneuve guide screwed on, and the stricture cut with the knife in the usual way. Then the instrument was removed and a grooved staff could easily be introduced and the perineal incision made without any trouble.

The author stated that the great stumbling-blocks in the way of a wide use of internal cutting operations in deep strictures were hæmorrhage and sepsis. The combined operation had frequently been suggested as a means of doing away with these risks. The operation above outlined could be done in all cases where the introduction of a filiform bougie was possible.

Dr. E. R. Palmer, of Louisville, said he still continued to treat his cases of deep urethral stricture by means of internal urethrotomy, and thus far had had no reason to change his method. He expressed the opinion that the dangers of cutting in the deep urethra without a perineal opening had been exaggerated. In performing the internal operation it was necessary to observe the most careful asepsis. The hæmorrhage was sometimes severe, but could usually be readily controlled.

Dr. Otis said he did not agree with the statement made by Dr. Palmer that the dangers incident to cutting in the deep urethra had been exaggerated. He had seen almost fatal hæmorrhage follow a deep internal urethrotomy. With a perineal opening the bleeding could be readily controlled.

Cancer of the Urethra.—Dr. Arthur T. Cabot, of Boston, reported the case of an elderly man who had entered the hospital on March 29, 1895. Thirty-five years ago he had had gonorrhœa, from which he had entirely recovered. Nine years ago an abscess had formed in the perinæum, through which, however, no urine had passed. About a year ago he had begun to have some difficulty in passing water. He did not, however, have complete retention, and his condition had improved somewhat under medical treatment. Nine weeks before he entered the hospital a swelling had appeared in the perinæum, which had been painful and confined him to bed. At the end of a fortnight it had been lanced and pus had been evacuated. A week later the urine had begun to come through the opening. After a brief period of comparative comfort the swelling had begun to spread, and less and less urine had passed through the natural passage until all of it had come through the fistulæ. Examination had shown the perinæum to be occupied by an indurated mass extending forward beneath the scrotum, with two fistulous openings over it. The urethra had been impervious to instruments, even of the smallest size, all of them having been arrested at about the peno-scrotal angle.

On April 1st the perinæum had been laid widely open and considerable pus evacuated from various side pockets. The walls of the abscess had been in such a sloughy condition that nothing unusual had been noticed at that time in the character of the case. The greater part of the induration had cleared up in a few days, but there had still remained a hard, sloughing mass at the bottom of the cavity about the urethra. Ether had again been administered on April 15, 1895, and a careful examination had shown this hard tissue to be distinctly of the nature of a neoplasm. It had extended forward to the peno-scrotal angle, and backward to just anterior to the triangular ligament. The prostate had been slightly enlarged, but not more so than was usual in a man of the patient's age. Under the microscope the tumor had proved to be a cancer of which the cells were small and cylindrical in character. Its origin from the urethral mucous membrane or from some of the glands associated with it had been made clear by the anatomical relations found at the operation. The tumor had been separated by a wide interval from the skin, and had not extended in either direction beyond the perineal portion of the urethra. As regarded treatment, the case had come under observation too late to admit of any possibility of eradicating the tumor by operation. The only further treatment had been directed to keeping the urine in a bland and unirritating state, and to diminishing the discomforts of the sloughing mass in the perinæum by the use of antiseptic applications. Dr. Cabot stated that he had been able to find but five recorded cases of urethral carcinoma.

Dr. Fuller stated that he had reported a case of cancer of the urethra some months before. An autopsy had been refused, and it had been impossible to ascertain just where the disease had begun.

Dr. Bryson said he had seen two cases where the disease had evidently begun in the fossa navicularis.

Urethroscopy.—Dr. Otis exhibited the model of an instrument which consisted essentially of a small telescope attached to the urethroscope. By means of this instrument the urethroscopic field was enlarged and a better view obtained.

A Circumcision Tractor and Clamp were shown by Dr. Lewis.

An Instrument for Milking the Prostate and Seminal Vesicles per Rectum, consisting of a small roller attached to a long handle, also a **Circumcision Forceps** were shown by Dr. W. F. Glenn.

Traumatic Rupture of the Urethra; Restoration after Thirty-six Years.—Dr. Chismore reported the following case: The patient had been a man, aged forty-two years, a brewer by occupation. At the age of six years, in order to avoid constantly wetting the bed at night, for which he had often been punished, he had tied a string about the penis near the scrotum. The constriction thus produced had entirely severed the urethra and corpus spongiosum, and divided fully half of the corpora cavernosa, so that on bending the penis upward the severed ends of the urethra had been over an inch apart. Two attempts had been made in Germany to restore the urethra by a plastic operation, but both had failed. Several months ago he had come under Dr. Chismore's observation, who had first made a perineal section, through which the urine had been allowed to flow, and then denuded the tissues of the old wound, precisely as was done in attempting to close an old torn perinæum. The two ends of the urethra had then been cut off squarely, a staff introduced, and then the severed portions of the corpora cavernosa closely drawn together by means of a deep line of buried catgut sutures. Accurate approximation of the lower surface of the urethra had been obtained by these catgut sutures. No attempt had been made to suture the upper or deeper half of the urethra, owing to the difficulty of accurately adjusting the stitches. The corpus spongiosum had been closely sutured and the integument then brought together.

On the second day after the operation the man had had an attack of delirium tremens. On the thirteenth day the catheter had been removed and the perineal incision permitted to close. The man now passed his urine entirely through the normal urethra, the severed ends of which had united so closely that the introduction of a bulbous sound failed to reveal the line of union. Since the operation the man had had two erections without pain.

In connection with this case, Dr. Chismore exhibited a number of photographs to illustrate the technics of the operation.

AMERICAN NEUROLOGICAL ASSOCIATION.

Twenty-first Annual Meeting, held in Boston, on Wednesday, Thursday, and Friday, June 5, 6, and 7, 1895.

The President, Dr. Philip Coombs Knapp, of Boston, in the Chair.

(*Continued from page 219.*)

Cortical Localizations in the Light of Recent Researches into the Minute Anatomy of the Cortex.—In the further discussion of Dr. Mills's paper with this title, Dr. Angell, of Rochester, said he could corroborate Dr. Collins, because he had had a similar case. He had made the prediction that there would be paralysis for five or six days at least, and to his surprise, when the boy recovered from the anæsthesia, two or three hours after the operation, he had tested him thoroughly and had found sensory paralysis. Within twenty-four hours there had been absolutely no sensory paralysis or any sensory disturbance. He did not believe it was possible to make an impression upon any centre of the brain closely related to another centre without temporarily affecting that sensory centre. Whether this would explain the reason why there was a short paralysis of sensation when we removed the motor cortex or not was, of course, beyond our power yet to determine. It might be that by cutting into the cortex we affected the radicles from the sensory tract which we supposed reached over and produced this diffusion of sensation that had been referred to.

Dr. Prince, of Boston, said there was a third fact which Dr. Starr had left out of consideration, and that was the fact that in many of the cases which had been referred to there had been no loss of sensation. These must be exceptional cases that must be taken into consideration in order to find a law. A great many could be mentioned. He referred to two which he thought were of great importance. Many, he said, would remember the case of Dr. Hall White's, published in 1893, in which case he had excised a certain portion of the cortex, and with great care had observed the effect on sensation, and in which, although there had been paralysis, there had been no loss of sensation. What seemed to be a most crucial test was a case published a short time ago. In that case he had first scooped out a piece of the brain equal in size to half an orange, leaving a hole two inches in depth, involving a very large portion of the upper part of the descending convolutions, the caudate lobule, and some part of the parietal convolution. Before the operation there had been hemianæsthesia with paralysis; after the operation there had absolutely been no loss of sensation whatever, although tested for in the most minute way. A case like that, it seemed to him, was a crucial case, and if the word centre had any meaning whatever it must mean a portion of brain the function of which was destroyed when it was taken away. These cases must be taken into consideration, and they showed that a large portion of the motor cortex could be destroyed without loss of sensation. Dr. Dana had asked for an explanation of these other cases. That was another question. He did not know how to explain them. It was common to have an injury of the corpus striatum with aphasia and sensory disturbances and beginning with hemianopsia; hemianopsia was common with lesions of the corpus striatum, and yet no one localized hemianopsia in the corpus striatum. Aphasia was common as a secondary disturbance with lesions in different parts, and yet we knew where aphasia was localized. We therefore must regard them as in some way secondary disturbances. In the case of the corpus striatum we could explain it by œdema and local congestion. It was possible that it might be explained by some form of irritation of associated fibres and the effect of inhibition. Whatever the explanation, it seemed to him we must distinguish the facts and the logical deduction from those facts for any necessary explanation.

Dr. Putnam said that no one would speak clinically or anatomically of the sense of hearing and comprehension of spoken words as situated in the same part of the brain, but we knew these two functions leaned on each other internally so closely that not only was there more or less aphasia from disturbance of the centre of hearing, but there was also, in a lesser degree, a great deal, as was also the case with sensory phenomena, of disturbance of centres of comprehension in most forms of motor aphasia. In short, cerebral functions did not exist in themselves; they existed as related to other functions, and we could not destroy one without more or less impairing others, although it might be only for a brief time.

The PRESIDENT added that the whole of our knowledge of the neuron went to show the very pronounced dependence of the motor neuron upon the sensory neuron. In the primary neurons it had been clearly proved that the terminal processes of the axis cylinder of the sensory neuron were closely connected with the apical process of the motor neuron in the spinal cord. The development of the fibres in the cortex, in the brain itself, showed that the sensory tract passed distinctly upward toward the central convolution, the parietal region, rather than downward and inward toward the gyrus fornicatus, where Ferrier some time ago located the sensory centres, and where Dr. Mills still had a leaning toward placing it. In other words, judging from all the analogies in the anatomy of the brain, either the higher sensory neurons must pass upward directly to connect, by their axis cylinder, processes with the cells of the body motor neuron, or there must be association tracts from these axis cylinders going up to the motor processes. We found no association tract passing up from the gyrus fornicatus to the central fissures, and furthermore, although Dr. Prince had just brought up the negative cases of lesion of the central convolution without injury to sensation, there had been in the past a very large number of so-called negative cases of lesion about the central convolution with absolutely no motor disturbances. Most of those, with our increasing knowledge, had been explained away, and ten negative cases did not afford so much evidence as one positive case. The positive cases of sensory disturbances following lesions behind and in front of the fissure of Rolando were increasing in number and became very conclusive. The positive cases of lesion in the neighborhood of the gyrus fornicatus were very few and far between.

Dr. MILLS maintained that the discussion confirmed the standpoints he had always taken. It seemed to him astounding that Dr. Dana and others had spoken of the cases in which there was a physiological or pathological lesion of the motor cortex as exceptionally producing motor symptoms alone. Every one present must admit the cases referred to by Dr. Starr, Dr. Dana, Dr. Putnam, and Dr. Knapp, because they were known to have been well studied and well recorded. He meant cases in which sensory phenomena of some sort had accompanied the motor phenomena in cases of destructive lesion of the prerolandic cortex. We must admit, too, the two or three cases in which certain experiments upon the cortex during life had caused peculiar disturbances of sensation at the time. The cases were as a hundred to one to the cases against the view that had been collected by Brown-Séquard as against the doctrine of crossed paralysis. These cases of sensory disturbance from strictly limited lesion of the motor cortex, cases in which the symptoms were motor alone instead of sensory, were as a hundred to one, and we no longer thought it worth while to collect them. The speaker stated positively that in a score of these cases the patients had been examined with the greatest care during life, and the lesions determined after death, and in cases of operation the greatest care had been taken in studying sensory phenomena, and those sensory phenomena had not been present. He mentioned two cases of his own, one in which Dr. Hearn had excised cleanly a portion of the cortex, and a portion right across and in front of the Rolandic fissure; he also mentioned another case in which Dr. Keen had done the same thing, cleanly excising the cortex, in which he had studied with the greatest care, as soon as it had been possible, the sensory phenomena, in which these had not been present; but the motor phenomena had persisted day after day, and changes had been noted until the patient had been greatly restored as regarded motion and sensation, which had not disappeared at all. He did not think it worth while, therefore, to cite these cases which Dr. Dana had collected with great skill and labor as an argument of great value against the very numerous cases which taught the other thing. With regard to the explanations, he said, they had been given, at least some of them. He could suggest three or four explanations for these cases, in which destructive lesions cephalad of the sensory area had given rise to sensory disturbances.

One explanation, which might seem far-fetched, was that these cases were somewhat of the nature of the cases in which there were sensory disturbances in hystero-traumatisms. Hemianæsthesias and segmental anæsthesia, as the result of a man being struck on the head, or the leg, or the trunk had been alluded to, and certainly the traumatism inflicted by the surgeon's knife, or by injury, or by disease in acute cases, or by operation, such as Dr. Dana had referred to, was greater than that which occurred in these other cases. Another explanation was that which he had suggested in 1888, which had grown out of these later researches on cortex anatomy. Undoubtedly every area of the cortex, visual, auditory, gustatory, sensory, etc., must be related and anatomically connected with the motor regions of the cortex. Now, it was through the destruction of these terminals of the fillet radiations, whether they were continuous with the apical process of the pyramidal cells or simply constituted a field of conjunction, that there occurred a separation between the motor and sensory areas, and, at least, temporary disturbances of sensation would very probably result in many instances. It was a great cortical sensory expanse in this sense, but there was one region in the brain in which these fillet radiations were placed between the cortex, which, for the surgeon's and physician's purpose, should be regarded as the sensory region. It was next to the motor region, and between the motor and great sensory regions. It had a separation and one which Dr. Mills believed was practical for our purposes.

The remarks made by Dr. Starr he thought were, on the whole, confirmatory of what he had stated. It seemed, therefore, he said, that the weight of argument and the weight of the evidence advanced was still in favor of the localizations to which he had always clung, which had been believed in by Charcot, Ferrier, and others. He had never maintained that the gyrus fornicatus was the sole region of common sensibility in the cortex of the brain. His own position always had been that the sensory cortex proper included at least a portion of the gyrus fornicatus, the quadrate lobule, and the posterior parietal convolutions, and the arguments he advanced must stand for the motor region and not for a part of it.

Dr. DANA asked if Dr. Mills would tell specifically whether he denied that the central convolutions had any sensory function; if he absolutely excluded sensory function from the central convolution.

Dr. MILLS replied that, for our purposes and for our practical idea of a centre or area, he believed that the central convolution, or the convolution cephalad of the central fissure, had no sensory function; that the posterior central convolution and the posterior parietal, and the region he had named, perhaps took part in sensory phenomena, meaning the sensory region posterior to the central fissure.

(*To be continued.*)

Book Notices.

Maladies congénitales du cœur. Par A. Moussous, professeur agrégé à la Faculté de médecine de Bordeaux, etc. Paris: G. Masson, 1895. Pp. 5 to 238. [*Encyclopédie scientifique des aide-mémoire.*]

The author in his preface disclaims any intention of making an exhaustive survey of the teratology of the heart, but aims to present those abnormal conditions of the central organ of circulation originating *in utero* in consequence of some pathological process.

The first chapter is devoted to a brief *résumé* of the embryogeny of the heart. This is followed by the consideration of individual anomalies, including those of the interventricular and of the interauricular sæpta of the pulmonary artery and of the aorta.

Anomalies of the semilunar valves include supernumerary valves and a deficiency in their number or even an absence of all valves, the latter being the most common. There is an excellent account of the anomalies associated with absence or arrest in the occlusion of the primitive ventricle, of those associated with absence or arrest in the occlusion of the primitive auricle, and of those of the aortic bulb.

The different theories regarding the pathogenesis of congenital cardiac anomalies are reviewed, and the author shows the difficulty of accounting for these anomalies by intra-uterine endocarditis or by simple arrest of development. He attaches great weight to the influence of heredity in their causation.

The subjective and objective symptoms, the course, complications, prognosis, diagnosis, and treatment are reviewed from the accepted standpoints.

The volume affords an excellent review of the subject of congenital cardiac anomalies.

A New Method of Inhalation for the Treatment of Diseases of the Lungs. By W. H. Spencer, M. A., M. D. Cantab., M. R. C. P. Lond., Consulting Physician to the Bristol Royal Infirmary. London: The Scientific Press, Limited, 1895. Pp. 3 to 54.

This book describes at considerable length what the author designates as a new method of inhalation in which certain volatile oils are evaporated by the aid of artificial heat.

The new vaporizer is essentially a water bath suspended over a colza-oil lamp; the author and inventor alleges a nice adjustment of the evaporating pan, water pan, and lamp, so as to maintain a fairly accurate equilibrium between the heating of the water and its loss by evaporation. The air of the room occupied by the patient is kept filled with the vapor of an antiseptic.

If this method is new in England it is old in America, and the style of the book suggests that it was written in order to exploit popularly the vaporizer described in the volume.

Les tuberculoses animales. Leurs rapports avec la tuberculose humaine. Par Edouard Nocard, professeur à l'École vétérinaire d'Alfort. Paris: G. Masson, 1895. Pp. 5 to 208. [*Encyclopédie scientifique des aide-mémoire.*]

Villemin demonstrated in 1865 that tuberculosis was an inoculable and communicable disease, and Koch, in 1892, isolated the specific microbe. Since that time various investigators have shown that there is not a domestic animal that is completely refractory to the disease, although there are differences in receptivity of the contagion. In this volume the author presents a careful study of the lesions, symptoms, course, duration, diagnosis, ætiology, and treatment of tuberculosis in cows and oxen, in swine, in horses, in sheep, in dogs, in cats, and in birds. He attaches great value to the use of tuberculin as a means of diagnosis, but considers that the treatment of the disease in animals is in an experimental stage.

The volume is a useful contribution to the literature of tuberculosis.

Rapport et mémoires sur l'éducation des enfants normaux et anormaux. Par E. Séguin. Préface par Bourneville, médecin de la section des enfants de Bicêtre, etc. Paris: Felix Alcan, 1895. Pp. xxxviii–2 to 376. [*Bibliothèque d'éducation speciale.*]

This is a French translation of the late Dr. Séguin's *magnum opus* that is familiar to all who have given attention to the question of the education of normal and abnormal children. Dr. Bourneville has written an appreciative preface, in which he incorporates several memorial discourses. It is to be hoped that this translation will increase the sphere of usefulness of Dr. Séguin's great life study.

Le phénol sulforiciné dans la tuberculose laryngée. Par Albert Ruault, médecin de la clinique laryngologique de l'Institution nationale des sourds-muets de Paris, etc. Paris: G. Masson, 1895. Pp. 5 to 91.

The author has used local applications of sulphoricinate of phenol in the treatment of laryngeal tuberculosis since 1889, and in this monograph he presents a complete and detailed statement of the pharmacology, modes of employment, action, and therapeutic value of this remedy. As a result of its use in four hundred cases of laryngeal and pharyngeal tuberculosis he concludes that phenol sulphoricinate is far superior to lactic acid or any other topical remedy in the treatment of those diseases.

On the Relation of Diseases of the Spinal Cord to the Distribution and Lesions of the Spinal Blood-vessels. By R. T. Williamson, M. D. Lond., M. R. C. P., Medical Registrar, Royal Infirmary. London: H. K. Lewis, 1895. Pp. 5 to 41.

Dr. Williamson shows that the distribution of the blood supply of the spinal cord furnishes an explanation of many points with respect to the localization of lesions in various parts of the white and gray matter, and gives reasons for believing that many cord affections depend primarily upon lesions of the vascular system.

BOOKS, ETC., RECEIVED.

Practical Dietetics, with Special Reference to Diet in Disease. By W. Gilman Thompson, M. D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the University of the City of New York; Visiting Physician to the Presbyterian and Bellevue Hospitals. New York: D. Appleton & Co., 1895. Pp. xxii–802. [Price, $5.]

Atlas of the Diseases of the Skin, in a Series of Illustrations from Original Drawings, with Descriptive Letterpress. By H. Radcliffe Crocker, M. D., F. R. C. B., Physician to the Department for Diseases of the Skin, University College Hospital, etc., London. Fasciculus XI. Edinburgh and London: Young J. Pentland. New York: Macmillan & Co., 1895. [Price, $6 each part.]

The Pocket Materia Medica and Therapeutics. A Résumé of the Action and Doses of all Officinal and Non-officinal Drugs now in Common Use. By C. Henri Leonard, A. M., M. D., Professor of the Medical and Surgical Diseases of Women and Clinical Gynæcology, Detroit College of Medicine, etc. Second Edition, revised and enlarged. Detroit: The Illustrated Medical Journal Company, 1895. Pp. 5 to 387.

Spectroscopie biologique. Spectroscopie du sang. Par le Dr. Albert Hénocque, directeur-adjoint du laboratoire de physique biologique du Collège de France. Paris: G. Masson, 1895. Pp. 5 to 199. [*Encyclopédie scientifique des aide-mémoire.*]

Les poisons de l'organisme. Poisons du tube digestif. Par A. Charrin, professeur agrégé, médecin des hôpitaux, etc. Paris: G. Masson, 1895. Pp. 5 to 188. [*Encyclopédie scientifique des aide-mémoire.*]

The Thermogenic Centre in the Tuber Cinereum. By Isaac Ott, M. D., Philadelphia. [Reprinted from the *Medical Bulletin.*]

Transactions of the Medical Society of the State of California. Session of 1895.

Lebanon Hospital in the City of New York. Second Report, from January 1, 1893, to May 1, 1895.

Report on the Stamford Typhoid Fever Epidemic. By Professor Herbert E. Smith.

Rules and Regulations Governing the Operations of the Bureau of Animal Industry; also the Acts of Congress under which they are made. Bulletin No. 9. [United States Department of Agriculture.]

The Medical Library for the Medical School or the Small Community. By Bayard Holmes, M. D., of Chicago. [Reprinted from the *Bulletin of the American Academy of Medicine.*]

A Study of the Microscopic Phenomena of Inflammation, with Special Reference to Diapedesis of the White Blood Corpuscles. By Charles F. Craig, M. D.

A Case of Dermatitis Exfoliativa Neonatorum. By David Kirk White, M. D., of Cleveland. [Reprinted from the *Journal of Cutaneous and Genito-urinary Diseases.*]

The Dilator in Diseases of the Air-passages and the Ear. By Seth Scott Bishop, M. D., of Chicago. [Reprinted from the *National Popular Review.*]

On Movable Kidney. By George Ben. Johnston, M. D., of Richmond. [Reprinted from the *Transactions of the Southern Surgical and Gynæcological Association.*]

Address on the Founding of the Illinois Hospital. By Seth Scott Bishop, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Imperforation of the Rectum. By George Ben. Johnston, M. D. [Reprinted from the *Transactions of the Southern Surgical and Gynæcological Association.*]

The Infiltration Method of Local Anæsthesia in Genito-urinary Surgery. By Bransford Lewis, M. D., of St. Louis. Read before the American Association of Genito-urinary Surgeons, May 28, 1895.

A Practical Low-priced Device to Secure the Trendelenburg Posture. By William A. Edwards, M. D., of San Diego, Cal. [Reprinted from the *University Medical Magazine.*]

The Operative Treatment of Fistula in Ano. By Lewis H. Adler, Jr., M. D., of Philadelphia. [Reprinted from the *International Medical Magazine.*]

The Treatment of Anal Fissure, or Irritable Ulcer of the Rectum. By Lewis H. Adler, Jr., M. D. [Reprinted from the *American Lancet.*]

Extirpation and Colotomy in Cases of Carcinoma of the Rectum. By Lewis H. Adler, Jr., M. D. [Reprinted from the *Medical News.*]

The Treatment of Fistulæ in Ano by Lange's Method of Immediate Suture of the Tract. By Lewis H. Adler, Jr., M. D. [Reprinted from the *Medical News.*]

Urinary Analysis as a Means of Diagnosis. By E. T. Duke, M. D., of Cumberland, Md. [Reprinted from the *Maryland Medical Journal.*]

Strabismus as a Symptom, its Causes and its Practical Management. By Leartus Connor, M. D., of Detroit. [Reprinted from the *Journal of the American Medical Association.*]

Medical Terminology. Its Etymology and Errors. By P. J. McCourt, M. D. [Reprinted from the *Medical Record.*]

Die Behandlung der Lungentuberculose mit Ichthyol. Von Dr. L. Guido Scarpa. [Separat-Abdruck aus der *Therapeutischen Wochenschrift.*]

Ichthyol bei Epididymitis gonorrhoica. Von Dr. S. Mayländer. [Separat-Abdruck aus der *Pester medizinisch-chirurgischen Presse.*]

Solfo-ittiolato d'ammonio nella suppurazione. Por Dott. Adolfo Liscia. [Estratto della *Gazzetta degli ospedali e delle cliniche.*]

New Inventions, etc.

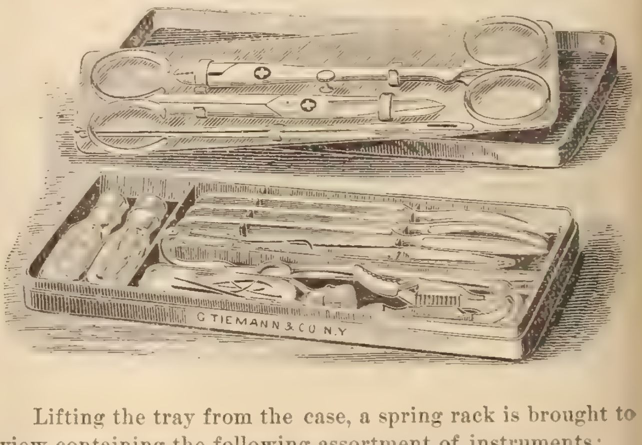
A NEW ANTISEPTIC POCKET CASE.

By Cyrus Edson, M. D.,

EX-COMMISSIONER OF HEALTH OF NEW YORK.

I have devised a new antiseptic pocket case, the idea of which was suggested to me by the case made for my new antiseptic syringe, described in the article published on Antitoxine in Diphtheria, *Medical Record*, April 6, 1895.

It is made of seamless metal, nickel-plated, and is so spaced as to hold an assortment of instruments which will, I think, be found sufficient to meet any emergent necessity. The corners of the case are rounded. The entire case and contents can be readily made aseptic by immersion in hot water. When the cover is removed a tray is seen containing scissors and forceps. The forceps are of the kind known as the hæmostatic and Abbe's needle forceps.


G TIEMANN & CO N.Y.

Lifting the tray from the case, a spring rack is brought to view containing the following assortment of instruments:

One straight knife.

One curved probe bistoury.

One sharp curved bistoury.

One plain artery forceps and tenaculum combined.

Two Langenbeck's serrefins.

One double retractor with solid point, with a sharp curette in plain ordinary handle.

Two silver probes, one director, and one aneurysm needle.

One phial containing needles moistened in vaseline.

One phial containing silk and one containing catgut.

The case contains as many instruments as a large leather case and is much more compact. It has the very great advantage of being readily and quickly made aseptic. The knives are all made of one piece of metal, and their handles are somewhat shorter than that of the ordinary knife. They may be described as being a modified form of the well-known Dr. Little knife. The size of the case adapts it readily to the pocket. It fills what I believe is a long-felt want—a light antiseptic case of small dimensions, containing a very carefully assorted collection of instruments.

The fact that it is made by Tiemann & Co. vouches for the excellence of its workmanship.

Miscellany.

Internal Secretions.—The *Lancet* for August 10th publishes an article on this subject by Professor Edward A. Schäfer, of London. The subject, he says, is one of far-reaching interest, although its full importance has only lately come to be recognized. Internal secretions, he says, are of no lesser importance than the external secretions. Every part of the body takes up materials from the blood and transforms them into other materials. Afterward they are returned into the circulating fluid, and in that sense every tissue and organ of the body furnishes an internal secretion. Moreover, certain important glands, which are provided with ducts, not only possess the faculty of yielding an external secretion, but have equally important functions in connection with internal secretion. Thus, says Professor Schäfer, both the liver and the pancreas are as essential to life by virtue of the internal secretions which they furnish to the blood as they are by their external secretions, for the entire removal of either of these organs causes death, and this is due to the removal of the influence which they exert on the metabolism of the body by the loss of their internal secretions, not necessarily to the loss of their external secretions; for, in the case of the liver, it is known that the bile may be diverted by a fistulous opening without any serious interference with the vital functions, and the same is true of the pancreatic juice. The kidney, he says, is another instance of this, for Dr. Rose Bradford has shown that the kidney is not a real exception to the rule, since enough of the kidney substance may be left to carry on the excretory products of the body, and yet the removal of the remainder of the organ may cause such disorganization of the nitrogenous metabolism of the body as to lead speedily to death. The same result, says the author, is not obtained with all glands. The salivary glands may be entirely removed without any marked symptoms supervening. Removal of the generative glands, however, leads to marked alterations in the development of other parts of the body. In the last-mentioned case the changes are without doubt produced through the nervous system, and are not connected with the internal secretion of the glands; and with respect to the salivary and mammary glands we may assume that, although they yield an internal secretion of some sort to the blood, it is of the same nature as that yielded by other organs, and that such organs may act vicariously for those removed. This is, however, inapplicable to the liver, the kidney, or the pancreas, removal of which or restriction of their internal secretions is inevitably followed by a fatal result.

Professor Schäfer says that the liver affords an excellent illustration of the fact that internal secretions may, like ordinary or external secretions, either serve some useful purposes in the body, or may be formed only to be got rid of (excretions). The formation of glycogen and sugar is an example of a useful internal secretion; that of urea, of what would be termed in the ordinary sense an excretion, although it is not actually got rid of by the liver, but is produced by that organ only to be got rid of by the kidney. The internal secretion of the pancreas may detain us somewhat longer. Among the racemose secreting glands the pancreas offers a peculiarity of structure which, in the first instance, it may be well to note. For we meet here, beside the secreting alveoli and ducts, a peculiar epithelium-like tissue which occurs in isolated patches throughout the organ and which is characterized by its extreme vascularity. These islands of epithelioid tissue are quite characteristic of pancreas. We know of no other externally secreting gland which contains them.

Now, it was formerly believed that the sole function of the pancreas was to yield pancreatic juice, and this, it must be confessed, is in itself a sufficiently important function, seeing that this fluid contains ferments which act on all the principal organic constituents of the food. Before 1889 it had indeed been remarked that cases of glycosuria occurring in the human subject were frequently associated with disease of some kind of the pancreas. Frerichs found that twenty per cent. of the total number of cases of diabetes which came under his notice were accompanied by obvious changes in the pancreas. This observation led to experimental inquiry. Claude Bernard had long previously attempted to entirely remove the pancreas, but all his attempts were unsuccessful, in so far that the animals speedily succumbed. In 1889, however, the operation was successfully performed by von Mering and Minkowski. They found that in all cases in which the entire pancreas was removed the operation was followed within the space of a very few hours by the appearance of sugar in the urine, and this to a great extent—as much as from five to ten per cent. being found even in fasting animals. Accompanying the condition of glycosuria there is also produced polyuria; and these conditions occur even under a purely flesh diet, and are accompanied, as might be supposed, by a rapid wasting, and followed within the space of fifteen days or less by death. This result is not due to the loss of the pancreatic secretion, for, as we have already seen, the pancreatic juice may be diverted by a fistula, and the animal may remain in perfect health. Nor is it due to the loss of the secreting structure; for it has been found possible to destroy the secreting structure of the organ without the supervention of diabetes. This was done successfully by Schiff in 1872. Schiff's method, which was a repetition of experiments by Bernhard, was the injection of paraffin into the duct of Wirsung. In Bernhard's original experiments all the dogs operated on speedily died; but this was probably due to accidental causes, and not to the actual destruction of the pancreatic tissue; for in Schiff's experiments the dogs survived and remained in perfect health. The fact that removal of the pancreas is followed by glycosuria was not at that time known, and the appearance of sugar in the urine was not therefore looked for by Schiff. But there can be no doubt of the absence of any severe form of diabetes, because the animals underwent no wasting.

Quite recently the experiment has been repeated by Thiroloix, who found that, although the gland was reduced by the process of atrophy supervening on the injection to a mere rudiment, symptoms of diabetes do not occur as when the whole gland is removed. It is now well known that if portion of the pancreas be left, about a quarter or rather more, no glycosuria appears. In the great majority of cases the animals remain healthy; so that it is clear that a portion only of the gland can prevent the diabetic symptoms. Nor need the portion of gland which is left remain in its ordinary situation. It or a portion of the gland from another animal may, in fact, be grafted either elsewhere into the peritoneal cavity or under the skin. Provided the grafting is successful, and the portion of the gland employed of sufficient size, removal of the pancreas is now no longer followed by the usual symptoms. The animal may remain, in fact, in perfect health. But, if at any subsequent time the grafted portion of pancreas is removed, diabetes supervenes, and the animal dies within a short time, as after a primary removal. Now, it has been shown by Thiroloix, says the author, that the grafting of a portion of pancreas, the secreting part of which had been destroyed by injection of paraffin along the ducts, is also efficacious in preventing the advent of diabetes after removal of the pancreas. We must therefore assume that the material, whatever it may be, which is furnished by the pancreas to the blood, and which prevents excessive formation of sugar in the blood and in the urine, must be formed by some other constituents of the gland than the secreting cells; for there is every reason to believe that these cells are eventually completely destroyed after the ducts have been blocked in the manner described.

The only fact that appears certain in connection with the manner in which the pancreas prevents excessive production of sugar within the body is that this effect must be produced by the formation of some material, secreted internally by the gland and probably by the interstitial vascular islets, and that this internally secreted material profoundly modifies the carbohydrate metabolism of the tissues.

The next internal secretion, says the author, is that of the thyreoid gland. The process of study is in one sense simpler in this case, since there is no external secretion. That the thyreoid gland is a secreting gland no one who studies its structure and its mode of development can well doubt; except that it is unprovided in the adult state with a duct it has all the features of structure of secreting glands. It is formed of alveoli which are lined by epithelial cells, and these cells have been observed to exhibit changes after treatment with pilocarpine in no way dissimilar to those changes which have been noticed under like circumstances in the cells of true secreting glands. Further, we can observe the secreted material within the vesicles of the thyreoid in the form of the substance known as colloid.

Various theories, says Professor Schäfer, have been advanced to account for the effects of removal of the gland. H. Munk holds, or until lately held, that the effects of removal are entirely due to interference with adjoining nervous structures in the neck. But this, as in the similar theory propounded to account for the effects of extirpation of the pancreas, is absolutely negatived by the results of thyreoid grafting. Besides this theory, which must, it seems to him, at once be dismissed, there are two others which may be regarded as disputing the ground between them. Of these the one may be called the theory of autotoxication and the other that of internal secretion. The autotoxication theory assumes that there is a certain toxic substance which is constantly tending to accumulate in the blood, and which it is the duty of the thyreoid gland to render innocuous and to remove. According to this, the function of the thyreoid would be primarily excretory. This view is supposed to be supported by the statement that in animals which are dying after removal of the thyreoid the blood is toxic for other animals, and especially for those which have already had the thyreoid removed, although only a short time previously, and before the symptoms of thyreoidectomy have had time to develop. It is not stated what the probable nature of this substance is, or by what tissues it may be formed. The internal secretion theory would explain the phenomena of extirpation as due to the absence of a secretion which is formed within the thyreoid, and which is passed into the blood, possibly through the medium of the lymphatics: a secretion which is necessary for certain of the metabolic processes within the body, and especially for those connected with the nutrition of the central nervous system and of the connective tissues. For, in the first place, says the author, beneficial and not toxic effects follow the exhibition of thyreoid juice both in cases of thyreoidectomy in animals and in myxœdema and other affections in man; and, secondly, if we investigate the physiological effects of extract of thyreoid gland, whether prepared with water or glycerin, and whether previously boiled or not, we find that it produces a distinct action upon the blood-vessels, so that the blood pressure markedly falls, although the beats of the heart remain at about the same rate and of the same strength, This lowering of the blood pressure without influencing the action of the heart can only be produced in one way—namely. by increasing the calibre of the arteries. Before this effect upon the blood pressure was discovered it had been shown by Dr. George Oliver that the exhibition of thyreoid juice or other preparations of thyreoid in the human subject has a tendency to increase the calibre of the radial artery. It would seem, therefore, that the juice of the thyreoid and extracts which are obtained from the gland have a distinct physiological effect upon the vascular system. In connection with this it is of interest to recall the observations of Lorrain Smith upon the effects of thyreoidectomy in altering the gaseous exchanges—that is to say, the oxidations within the bodies of animals. Lorrain Smith found that in animals which have been deprived of the thyreoid body the reaction to changes of temperature was abnormally rapid. When normal animals are exposed to a cold atmosphere the production of carbonic acid becomes increased consistently with the increased oxidation which we know to occur, but this increase of production of carbonic acid does not take place immediately, but only comes on after a certain period of time, the temperature of the body being in the meantime maintained normal by those physical changes which occur in the circulation and allow the quantity of blood brought to the skin and the amount of heat thereby lost from the general surface of the body to be varied. Now, it is precisely these vaso-motor changes, says the author, which appear to be lacking after removal of the thyreoid, for the production of carbonic acid becomes almost immediately increased by exposing the thyreoidectomied animals to a low temperature. That the thyreoid gland yields an internal secretion which effects a useful purpose within the body appears to result conclusively from these facts, and the effects which follow thyreoidectomy are probably due to the loss of that secretion. Whether the gland also possesses the function of destroying toxic products of metabolism which would otherwise tend to accumulate in the blood is a point which requires the production of more conclusive evidence before it can be regarded as established.

Experiments upon normal animals with extracts of suprarenal have been performed by a number of observers, but by all in a very incomplete manner. For the most part they have been satisfied to subcutaneously inject extracts made with water and other menstrua and to observe the symptoms, if any, which result. As a matter of fact, he says, in some animals which are so treated there are no obvious symptoms.

The guinea-pig will stand a large subcutaneous dose of suprarenal extract without showing any symptoms at all, or with, perhaps, only a slight acceleration and increase of the force of the pulse. The same appears to be the case with the cat and with the dog, unless a very large dose be injected. Rabbits, on the other hand, are extremely susceptible to the influence of suprarenal extracts. If a large dose is given the animal may succumb within half an hour. If, on the other hand, the dose is only moderate in quantity, it may not show any symptoms at all for some hours, and then it may suddenly succumb. This primary absence of symptoms has been especially noted by Foà and Pellacani, who state that in many of the dogs which they experimented upon in this way there were no symptoms at all apparent on the day on which the injection was given, but that the next morning the animal was usually found dead. The cause of death, it may be added, in this case is not by any means clear. Foà and Pellacani have supposed that it may be due to paralysis of the respiratory centre, but the slight effect which intravenous injection of suprarenal extract produces upon this centre does not lend support to this conjecture.

Professor Schäfer considered the physiological effects of intravenous injection of suprarenal extract, and said that the facts were the results of experiments which had been carried on in his laboratory during the last two years. They show conclusively, he says, that the medulla of the suprarenal capsule contains a dialysable organic principle, soluble in water, and not destroyed by boiling for a short time, which produces a powerful physiological action upon the muscular system in general, but especially upon the skeletal muscles, the muscular walls of the blood-vessels, and the muscular wall of the heart. A certain amount of action is also manifested upon some of the nerve centres in the bulb, especially the cardio-inhibitory centre, and to a small extent upon the respiratory centre.

The effect upon the skeletal muscles is well shown in the frog, but can also be seen in mammals. The contraction of a muscle in response to a single excitation of its nerve is as ready as in the normal animal; but it is greatly prolonged, so that the result is comparable to that produced by a small dose of veratria, which, as is well known, has the effect of enormously increasing the contraction resulting from a single stimulation of the muscle or its nerve. It is in no way comparable to a curare effect, for the muscles remain as excitable through their nerves as before. It is therefore an effect entirely different from the so-called autotoxication paralysis which is stated to result after removal of the suprarenal capsules in animals, and the material which is extracted by water, therefore, from the suprarenal capsules is certainly not the same material that is said to accumulate in the blood after the removal of those organs. The action upon the circulatory system may be divided into the action upon the heart and the action upon the arterial system. Upon the heart the effect differs according as the vagi are cut or uncut. When the vagi are uncut, and the heart is therefore still in connection with the cardio-inhibitory centre in the medulla oblongata, the action of suprarenal extract is to slow, and even to entirely stop, the contraction of the auricle. Under the circumstances the ventricle continues beating with an independent slow rhythm. The result is to cause the pulse to be very slow. On the other hand, when the vagi are cut or their cardiac ends paralyzed by atropine the effect upon the heart is precisely the reverse. The strength and frequency of the auricular contractions are markedly increased, and those of the ventricle are correspondingly augmented. This naturally has the effect of sending a vastly greater amount of blood into the arteries, which by itself would alone produce a great rise in the arterial pressure. The direct action upon the arteries is, however, quite as marked as that upon the heart. If the blood pressure is taken in a dog in the usual way by connecting a mercurial manometer with the femoral artery, and if a minute dose of suprarenal extract is injected into a vein, it is found that even with the vagi uncut and the heart therefore slowed by the action of the extract the blood pressure rises considerably. But with the vagi cut or paralyzed by atropine the rise can only be characterized as enormous. The contraction of the arteries is further exemplified by the fact that if an organ, such as a limb, or the kidney, or the spleen, is inclosed within a plethysmograph the instrument indicates an enormous diminution in volume of the organ, which can only be accounted for by a contraction of its arterioles. This contraction is produced by the direct action of the drug upon the muscular tissue of the smaller arteries and not indirectly through the vaso-motor centre, for it obtains in the mammal equally well with the spinal cord cut or the bulb destroyed, or even in the case of the arm after the brachial plexus has been severed. In the frog it is produced also with the brain and spinal cord completely destroyed and salt solution containing suprarenal extract allowed to flow through the arteries.

Under these circumstances the flow of fluid, which without the suprarenal extract may have been comparatively rapid, becomes almost completely stopped, and this can only be due to the direct action of the extractive substance upon the muscular tissue of the smaller arteries. The enormous rise of blood pressure which is got after the vagi have been cut is shown in the tracings. The pressure may rise to four or five times its original height; in fact, says the author, no other agent will produce such an enormous increase of pressure except direct stimulation of the vaso-motor centre. It is not the case, however, that this centre is stimulated by the drug, as has been erroneously supposed by Cybulsky, for, as we have seen, the action is essentially a peripheral one. The effect passes off in the course of a few minutes. After a dose, no matter whether small or large, has been injected into a vein and has produced the results which we have seen, the blood-vessels slowly resume their ordinary calibre, the augmentation and increased frequency of the heart's beats become gradually lessened, and the blood pressure recovers its normal condition. While the pressure is raised under the action of the suprarenal, there is apparently no possibility of inhibiting the arterial contraction; even the strongest stimulation of the depressor nerve, which under ordinary circumstances produces through the vaso-motor centre a marked dilatation of the arterioles, is without result during the activity of this extract. The question naturally arises, How is it that the effect so soon disappears? In what manner is the active principle eliminated? It is not eliminated by the kidneys, for the effect passes off just as quickly, even although the renal arteries are clamped. It is not eliminated by the suprarenals themselves, for the same fact holds good for the suprarenals. It passes off almost equally quickly if the aorta and vena cava are tied in the upper part of the abdomen, so that there is no circulation of blood whatever in the abdominal organs. It is not oxidized or otherwise destroyed by the blood, for it retains its full potency even after it has been twenty-four hours in contact with that fluid. The most probable explanation of the disappearance of the effect seems to be that the active principle becomes packed away and eventually rendered innocuous in certain organs. That the muscles take most part in this storage is probable from the fact that the physiological effects upon the skeletal muscles are manifested for a long time after the effects upon the heart and arteries have disappeared. One of the most interesting and important facts regarding the material which is yielded by the suprarenals is the minuteness of the dose which is necessary to produce these results. As little as 0·0055 g. (5½ milligrammes) of dried suprarenal is sufficient to obtain a maximal effect upon the heart and arteries in a dog weighing 10 kilogrammes. For each kilogramme of a body weight, therefore, all that is necessary to produce a maximal effect is 0·00055 g. (little more than half a milligramme).

It has been shown that the active principle is contained only in the medulla of the gland, not in the cortex, and the medulla in all probability does not form more than one fourth of the capsule by weight. Of the dried medulla certainly not less than nine tenths is composed of proteid and other material which is not dialysable and which otherwise does not conform to the chemical properties which have been ascertained to belong to the active substance; so that, if we take all these facts into consideration, we find that, in order to produce the maximal effect, a dose of not more than fourteen millionths of a gramme per kilogramme of body weight is all that is necessary. Now, it is certainly true to say that one fourteenth of this dose will produce some effect, although not perhaps a very large one. We thus arrive at the fact, says the author, that this material, given in the proportion of not more than one millionth part of a gramme per kilogramme of body weight, which would be equivalent to $\frac{1}{13000}$ gramme (less than $\frac{1}{800}$ grain) for adult man, is still sufficient to produce very distinct physiological results.

It may well be that the suprarenal capsule is continually passing into the blood this active material, which, although present in minute quantities, may be supposed to produce an effect which is beneficial for the performance of the functions of muscular tissue, and especially the muscular tissue of the vascular system. It has, in fact, been stated by Cybulsky that the blood of the suprarenal vein contains a sufficient amount of the active principle of suprarenal extract to produce marked physiological effects. Professor Schäfer states that he made three very careful experiments in an endeavor to confirm this statement, but has not been able to find that the blood of the suprarenal vein does actually contain a sufficient amount of this material to produce, even in doses of as much as ten cubic centimetres, any more result than venous blood generally. But, whether we are able to show it experimentally or not, there is, he supposes, very little doubt of the fact that the materials formed pass somehow or other into blood, and when we compare these results of suprarenal injection with the converse effects obtained from the removal of suprarenals and from disease of suprarenals, we can come to no other conclusion than that we have before us a well-marked instance of an internal secretion. The general results to which we are led from a consideration of these facts and others point strongly in favor of a theory of internal secretions, and it is obvious that such internal secretions may be of no less importance than the better recognized functions of the external secreting glands. These internal secretions have to be definitely reckoned with by the physician, while at the same time the therapeutist will be able to avail himself of the active principles which they contain, and in certain cases to use extracts of internally secreting glands in place of the hitherto more commonly employed vegetable medicaments. That the subject has a vast future there can be no doubt, says the professor, for in spite of the advances which have been made in elucidating it during the last few years, a great number of points still remain obscure. Nevertheless, the way which the physiologist has attempted to show may be followed by the practitioner, and the result of these physiological experiments may now be utilized for the diagnosis and treatment of disease.

A New Disease.—A correspondent of the *British Medical Journal* says that an article of considerable interest was published in the April number of the *Journal of General Hygiene* by Dr. Biéliavski and Dr. Riéshetnikof, on a disease hitherto but little known, which they name *tarabagania tchuma*—that is, a plague arising in connection with the *tarabagania*, which is a rodent animal closely allied to the marmot. The correspondent goes on to say that the authors of the article have collected twenty-six cases occurring in the Akshin *okrug* (or military district) of that province. They were distributed among six families, and occurred in the years 1888, 1889, 1891, and 1894. In addition, six corpses of Buriats (a Siberian tribe) were found in an earth hut, bearing signs of having died from this disease. That their death was so caused was confirmed by the fact that a medical man and a *feldscher*, who made necropsies on these bodies, both contracted the disease and died from it. In fact, no case has yet been known of recovery from what appears to be one of the most malignant forms of disease yet observed. The symptoms are the following: The patient sickens with a feeling of heat and general feverishness; the temperature rises; there are giddiness, intense headache, flushing, restlessness, and distress. The pulse becomes rapid and weak. Some patients complain of oppression and pain in the chest, accompanied by occasional dry cough and scanty expectoration, which is sometimes tinged with blood. There is nausea, sometimes there is vomiting, and toward the end, which generally occurs on the second or third day, there may be diarrhœa. Weakness and general depression are marked features; consciousness remains more or less complete until death. The axillary glands may be swollen and red, but nothing is said as to the occurrence of suppuration. The incubation period seems to be from three to five days or more. No case of recovery has yet been met with; death always occurred on the second or third day. This disease is regarded by the authors as a typical purely contagious disease. It can be contracted solely by coming into contact with the fluids escaping from the body of an animal who has died from it, or from using the flesh of such an animal in an insufficiently cooked state. In the same way it is transmitted from patient to patient only by direct contact with the fluid excreta, or with the liquids which escape from the body after death. It has never been contracted from the use of the dried skins of the *tarabagan* or of the melted fat of the animal. When the infectious fluids are dried they also seem to lose their infective properties. The *tarabagan* is a hibernating animal; it sleeps from September to March. It is much hunted by the nomad Buriats and by the Cossack inhabitants of the Siberian steppes, who find its flesh a delicacy. Its fat is also greatly prized for greasing leather articles, straps, etc., and is also used for lighting purposes. In some years these animals sicken with some form of epizootic; they cease to bark, they become languid and slow in their movements, they roll about like a drunken man or lie half asleep on their earth mounds, and thus fall an easy prey to their enemies. Any human being who should now touch them would be certain to contract the fatal *tchuma;* on the other hand, animals of prey—wolves, foxes, or dogs—may eat the flesh from the bones with no bad result to themselves. No domestic animal has been known to contract the disease either from the *tarabagan* or from any of the human patients. The extreme danger of catching this disease is well known to the Siberians, and they are accordingly very careful in their dealings with the animals in question. This, and the fact that most of the dead animals are at once torn to pieces by wolves or other beasts of prey, probably accounts for the comparative rarity of the disorder in man. The only earlier reference to it in print appears to be a short article in the *Zabaikalski Oblastnui Vieztnik* (Journal of the Transbaikal Province) for 1892, in the form of an official notice from the authorities warning the inhabitants against the disease.

The Use of the Bicycle.—In the *Journal des sciences médicales de Lille* for August 3d M. H. Lavrand gives a *résumé* of a discussion in regard to the bicycle which took place at a recent meeting of the *Société de médecine.*

M. Lucas-Championnière presented the question from a hygienic point of view. The bicycle, he said, had been condemned as a means of exercise for women, and had been thoughtlessly compared to a sewing-machine, to which it was not at all analogous. It had been said to cause deformity, but this accusation showed a want of reflection and a profound ignorance of anatomy and of physiology. In reality, all the muscles came into play in order to propel the machine and to keep one's equilibrium; consequently the vertebral muscles could not but increase in size and in power. The first action of the bicycle was to develop the muscles, not only those of the legs, as was commonly believed, but all the muscles of the body, and in this exercise M. Championnière thought we had the most perfect method for muscular development. Its action on the general health was also evident. The manifestations of nutrition were profoundly modified; an examination of the urine had shown this. The increase of the proportion of urea had indicated a greater waste. The influence on the heart was also very evident, and any excess in this exercise was prejudicial. One of the most valuable advantages of this form of exercise, however, was that it put the heart into a good condition of resistance. With regard to the benefit to the lungs, it might be said that the good results were almost immediate, if care was taken to avoid the chill which was always apt to follow any prolonged exercise.

M. Marcel Brand thought that this form of exercise was the best that could be employed in the treatment of the vicious habits of adolescence, and he cited several cases in which recovery had been obtained when all other treatment had failed. The majority of affections dependent on the diminution of nutrition were favorably improved by the motion of the treadle. With regard to neuropathies, he said, the most favorable results had been obtained after a moderate use of the bicycle, and certain tabetics had derived much benefit from its use.

M. Bouloumie presented the subject from a therapeutic point of view. He stated that he had recommended the bicycle to several gouty persons who, after using it, had not suffered so much with stiffness in the knees and in the tibiotarsal articulations, which had become much stronger and more flexible. The general condition also had been benefited. In persons suffering with subacute nephritic colic from uric-acid gravel, and presenting frequent and continual pains in the kidneys, without renal inflammation, the exercise seemed to facilitate the passage and expulsion of the calculus and to diminish the pains. In such cases the patients must be warned against excessive exercise, as any fatigue was extremely harmful. For persons affected with urinary and digestive disorders, principally liver troubles, an upright attitude in the saddle, with the body resting squarely upon the ischia, was absolutely indispensable. In this way all parts of the body would contribute to the maintenance of the equilibrium, the abdominal organs were not compressed, the action of the diaphragm was not hindered, and the circulation was not impeded at any point. This exercise, on the whole, said M. Bouloumie, was one which favored the development of the muscles and regulated the principal functions, and it could be recommended from a physiological, hygienic, and therapeutic point of view, subject to these conditions: 1. A good position in the saddle. 2. A proper saddle. 3. A moderate rate of speed.

Guaiacol as a Local Anæsthetic.—At a recent meeting of the *Académie de médecine*, a report of which appears in the *Mercredi médical* for July 31st, M. Championnière related the case of a druggist who had burned his hand during a manipulation. He had at once applied a solution of guaiacol, and immediate relief had followed. This fact had led the author to make a trial of this agent to produce local anæsthesia with interstitial injections of a one-in-ten or a one-in-twenty solution. A Pravaz syringeful of a one-in-ten solution could easily be injected without causing toxic symptoms. The first trials had been made in dental surgery, and the results had been very satisfactory. In general surgery no extensive operations had been performed, but ablation of lupus of the scalp had been done after injections of guaiacol, and the patients had felt no pain. The action of guaiacol, said M. Championnière, was more slowly produced and subsided more gradually than that of cocaine. Its application to small abscesses had also given favorable results. It could be introduced into the system in rather large doses without causing any inconvenience; it was perfectly tolerated, and the only symptom that had been observed was a slight local sphacelus near the gums. Three quarters of a grain of guaiacol in a one-in-twenty solution seemed to be sufficient; it was probable, however, that as much as fifteen grains could be injected without danger.

M. Magitot did not share M. Championnière's opinion regarding the value of guaiacol as a local anæsthetic. M. Ferrand stated that he had frequently employed guaiacol, not by subcutaneous injections, but by thermic applications, and he had found, as a result of these applications with scarcely more than a cubic centimetre of the drug, a rather marked hypothermia and a veritable syncope. These applications had then, he said, produced a valuable anæsthesia, but at the same time symptoms that could not exist without danger. M. Laborde thought that guaiacol was an anæsthetic as well as a hypothermic, and even a very active antithermic. It was, he said, essentially a vaso-constrictor, and, for this reason, dangerous.

M. Ferrand said that he had seen accidents produced with a cubic centimetre of guaiacol. He had employed only from three quarters of a grain to a grain and a half. With regard to the eschars, they had not been numerous and had always been very limited. He thought the foregoing facts were very interesting and encouraging, and that investigations in regard to this subject should be continued.

Sulphur Baths in the Treatment of Whooping-cough.—In the *Journal de clinique et de thérapeutique infantiles* for August 8th there is an abstract of an article by M. J. B. Josset, which was published in the *Semaine médicale.* The author advises the use of highly sulphurous baths in this disease, as he has employed them for fifteen years, and they have invariably given him favorable results. The author uses the term highly sulphurous, he says, because the dose of potassium sulphide which enters into their preparation is stronger than that ordinarily used. The proper quantities of the polysulphide and water for the bath at different ages are as follows: From three to twelve months, half an ounce of polysulphide to ten quarts of water; from one to two years, three quarters of an ounce to fifteen quarts; from two to four years, an ounce to twenty-three quarts; from four to six years, an ounce and three drachms to thirty quarts; from six to eight years, an ounce and six drachms to thirty-eight quarts; from eight to ten years, two ounces and a drachm to forty-five quarts. The temperature of the bath should range from 96·4° F. to 97·8°, and its duration should be from twenty-five to forty-five minutes. The patients must take a bath every day, and, on getting out of it, all necessary precautions must be taken in order to avoid a chill. They must be dried rapidly with hot towels and wrapped in woollen blankets. The maximum duration of this treatment is about two weeks. According to M. Josset, recovery rarely fails to take place within that time. The employment of a quieting potion of white oxide of antimony, syrup of diacodion, and cherry-laurel water, given in doses varying according to the age of the patients, will also be found useful during the course of the disease.

A Case of Trional Poisoning.—The *Gazette hebdomadaire de médecine et de chirurgie* for August 10th contains an abstract of an article published by Dr. Reinicke in the *Deutsche medicinische Wochenschrift* for March 28th, in which the author gives an account of a case of trional poisoning. Three other cases, he says, have been recorded, but the following is distinguished from these because the author took all necessary precautions to prevent accidents: The patient was a woman, twenty-six years old, who suffered with hallucinations and obstinate insomnia. She had taken the trional from October 15, 1894, to January 29, 1895, with a few interruptions. On the 30th of January she complained of headache, vertigo, and epigastric pains. Her temperature was 101·6° F. A microscopical examination of the urine showed nothing abnormal. On the following day her condition became aggravated and she could not pass urine. On the 1st of February, however, she passed two hundred and fifty cubic centimetres of blackish urine, very dense and full of sediment. The examination of the urine showed the existence of a certain amount of albumin, and the microscope revealed red and white globules and numerous hyaline and granular casts. Dr. Reinicke could not say what product of decomposition had caused these alterations in the urine. Quincke, he said, seemed to have proved that the peculiar coloration in the urine in cases of trional poisoning was not due to hæmatoporphyrin.

The Treatment of Infantile Diarrhœa.—In the *Presse médicale* for August 3d there is an article on this subject by M. P. Le Damany. The question, he says, is a complex one, for infantile diarrhœa is very variable in its cause, in its nature, and in its clinical forms; it is also susceptible of various kinds of treatment. By far the best prophylactic treatment is good hygiene and the employment of a good wet-nurse. If the latter is not to be obtained, sterilized milk should be used, as it is the simplest of foods. The nursing-bottle should be very carefully washed in boiling water every time it is used, and the simpler it is in its construction the better. Toward the end of the second six months mixed food may be given to the child, and at about eighteen months it may be weaned. In spite of these precautions, however, says the author, a diarrhœa of a variable intensity may set in and cause a general weakness of the organism. The most important drugs to be used in the treatment of this trouble are opium, astringents, intestinal antiseptics, and inert powders. In children opium is extremely active, but M. Simon advises the use of it in small doses. For a child of six months he gives half a drop of Sydenham's laudanum every twenty-four hours; for a child a year old, one drop every twenty-four hours, and so on, increasing the dose according to the child's age. It is especially indicated in non-infectious apyretic diarrhœa and in lienteric and chronic diarrhœa. It diminishes the gastro-intestinal secretions and provokes a slight paralysis of the muscular coat of the intestine. Astringents, particularly tannin, may be given in benign diarrhœas, or in the serious forms, as an adjuvant to other treatment. Tannin, catechu, extract of rhatany, calumba, and guarana constitute, with iron perchloride (which must never be associated with tannin), the principal astringents. Nitrate of silver is used in enemata for lesions of the large intestine. Inert powders occupy a principal place in the treatment of infantile diarrhœas; their employment is easy, exempt from all danger, and, above all, efficacious. Bismuth, employed particularly under the form of subnitrate and of salicylate, is a very important remedy. It acts as an inert powder, as an antacid, and as an absorbent. It overcomes the exaggerated acidity of the intestinal and stomachic secretions, and it absorbs the intestinal gas, which, according to some authors, is one of the causes of diarrhœa. The principal substitutes of bismuth are lime and the calcium salts. Among intestinal antiseptics, lactic acid ranks first, and it is particularly efficacious in the green diarrhœa of children; it seems to render the contents of the intestine unfavorable to the development of the bacillus of this diarrhœa. Calomel acts as a purgative and as an antiseptic in infectious diarrhœa with fever; it evacuates the contents of the intestine and prevents the development of microbes. The most important of the other antiseptics are betol, salol, and benzo-naphthol. Naphthaline also is recommended by Bougers. Irrigation of the rectum and of the stomach with boiled water, with a solution of boric acid, with Vichy, or with salt water has given remarkable results in M. Grancher's service. By this method, says the author, the digestive tube is mechanically emptied of its toxic contents.

Aside from all these intestinal troubles, says M. Le Damany, disorders of the general condition must be largely taken into consideration. When there is a high fever, cold baths will lower the temperature notably. When there is a tendency to collapse, hot mustard baths, mustard plasters, and frictions over the entire body are especially indicated. At the same time inhalations of oxygen should be employed and hypodermic injections of ether and of caffeine administered. Alcoholic drinks should also be prescribed.

To remedy the dehydration of the tissues, subcutaneous injections of M. Hayem's artificial serum are indicated: Sterilized water, a pint; sodium sulphate, 150 grains; chloride of sodium, 75 grains. These injections should be given preferably in the subcutaneous cellular tissue of the thigh, or of the abdominal wall. The serum should be heated to a temperature of from 100·2° to 104° F., and from an ounce and a half to three ounces should be given at each injection.

In all cases of acute enteritis, says the author, a watery diet is a powerful adjuvant to all these antiseptic measures, because it suppresses the introduction of substances that are apt to ferment into the digestive tube. When the diarrhœa is only a more or less important symptom of a general infectious or dyscratic condition, every effort should be made to combat it, with quinine sulphate, or mercurial preparations and potassium iodide. Another form of diarrhœa to be guarded against is the uræmic diarrhœa, which is due to the elimination of toxic substances that accumulate in the organism in consequence of renal insufficiency.

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Original Communications.

EXPERIMENTAL RESEARCHES REGARDING THE STATE OF THE MIND IN VERTIGO.

VERTIGO AS AN AID TO HYPNOTISM AND NARCOSIS.

By J. LEONARD CORNING, A. M., M. D.

The State of Consciousness in Vertigo.—Very little has heretofore been ascertained respecting the condition of consciousness in vertigo. The greatest differences of opinion exist among writers on this point. Some affirm that in true vertigo there is no impairment of consciousness whatever; others are convinced that this can only be said of the minor degrees of the affection, and that in the severer varieties consciousness is always more or less deranged; while a third class of observers declare that the state of consciousness is invariably modified, be the dizziness pronounced or the reverse.

Multifarious Causation.—It is an undoubted fact that a very numerous and widely diversified class of derangements may give rise to what is known as vertigo, of which the true prototype is the group of phenomena produced by rapid rotation of the body around its longitudinal axes (rotary vertigo), as happens in dancing and the execution of certain acrobatic feats. Among the most common pathological causes of vertigo may be mentioned diseases of the ear, impairment of vision, stomachic derangements, disorders of the cerebral circulation (anæmia, hyperæmia), and organic lesions of the central nervous system, more especially of the vermiform process of the cerebellum.

It is evident that causes so apparently diverse must have at least some point of agreement in order to produce practically the same effect. The most obvious element of agreement consists in this, that they are all capable of causing, directly or indirectly, some derangement of the cerebrum, and more especially of the cerebral cortex.

To what extent is cerebral function modified; or rather —to return to our first proposition—to what extent and in what manner is the field of consciousness altered in vertigo?

Before answering this question, let me state that what is called the "reaction time" affords valuable information as to the state of consciousness in its relations to the external world—"objective consciousness," as it has sometimes been called. As some who read this may have forgotten the precise nature of what is known among psychologists and physiologists as reaction time, a word or two of explanation will perhaps prove acceptable.

It is a matter of experimental demonstration, as well as the result of ordinary experience, that mental processes of all kinds require a certain amount of time for their accomplishment. Moreover, the length of time consumed is in the direct ratio of the complexity of the mental act. To illustrate this point, let us assume that an impression is made upon the retina of the eye, and that as soon as that impression is perceived the subject presses upon the key of an electrical apparatus and so records the interval of time between the peripheral excitation and the issuance of the same in the purposive act—the so-called "reaction time." It will be found, as a result of a series of observations of this kind conducted by the aid of appropriate apparatus, that the average time in different persons is from one tenth to two twelfths of a second.

If, however, instead of making a single impression of uniform character upon the retina, we make heterogeneous ones, as when red and blue are displayed in indefinite order, and the subject is instructed to press the key only when the color red appears, the interval of time is at least twice as long. This additional consumption of time is due to the fact that not only is the mind obliged to take cognizance of the impressions, but to distinguish and select from them. Hence, the use of the term "discrimination time," to designate this more complicated variety of psychical reaction. As a matter of course, it is possible to determine the reaction time to touch, hearing, and sight; but what is of most importance for present purposes is the fact that the duration of the reaction period is markedly influenced by a variety of agents which interfere with the spontaneous and co-ordinate action of the cerebrospinal mechanism, and more especially of the brain. Thus the reaction time is shorter in health than in sickness, and it is longer after the ingestion of alcohol, ether, chloroform, or other agents which retard cerebral metabolism.

It follows, therefore, that by comparing the reaction time, after we have in some such way modified cerebral function, with the average normal reaction time, we shall, by a simple process of subtraction, be in a position to judge of the extent to which we have thus influenced the course of normal cerebration, particularly in its relation to the external world.

To appreciate the wide significance of this fact, it must be borne in mind that the central elaboration implied by what is termed reaction time is essentially composed of the perception of a sensation originating from without and the formation thereupon of a definite volitional impulse. It is self-evident, therefore, that any change in the duration of the reaction time, contingent upon influences which act upon the cerebrum, means a corresponding modification of the mechanism of sensation and volition.

If to this we add the results of "discrimination time," we are moreover at once informed of the subject's power of distinguishing ("judging") between sensations.

The average values of the reaction time are variously stated by different observers; in my opinion, those given by Waller are as nearly correct as any: To touch, $\frac{14}{100}$ of a second; to sight, $\frac{18}{100}$ of a second; to hearing, $\frac{16}{100}$ of a second.

Various means of computing reaction time have been suggested and employed; that which consists in the use of an electro-magnet, having upon its armature a pen to record upon a revolving cylinder the instant when a visual, touch, or auditory stimulus is applied, and the signaling (pressing of a key) by the subject when the stimulus is felt, is, in my opinion, the best.

Realizing how much information may be obtained regarding the condition of the mind from the reaction time alone, I determined to utilize this principle for the purpose of obtaining precise data as to the psychical state in vertigo. To this end I had made for me a revolving chair, of which the principal elements of construction are these :

1. A high-backed wooden chair (Fig. 1, *a*) supported on a steel shaft, the point of which is pivoted. This shaft is held in place by a framework of iron bars (*b*) two feet and a half high.

2. At a distance of four feet from this chair is a steel shaft of the same height as the chair bottom, surmounted by a wheel, provided with a crank handle (*c*).

3. The steel shaft supporting the chair and that surmounted by the crank wheel are provided with sprocket-wheels connected by a stout chain (*d*).

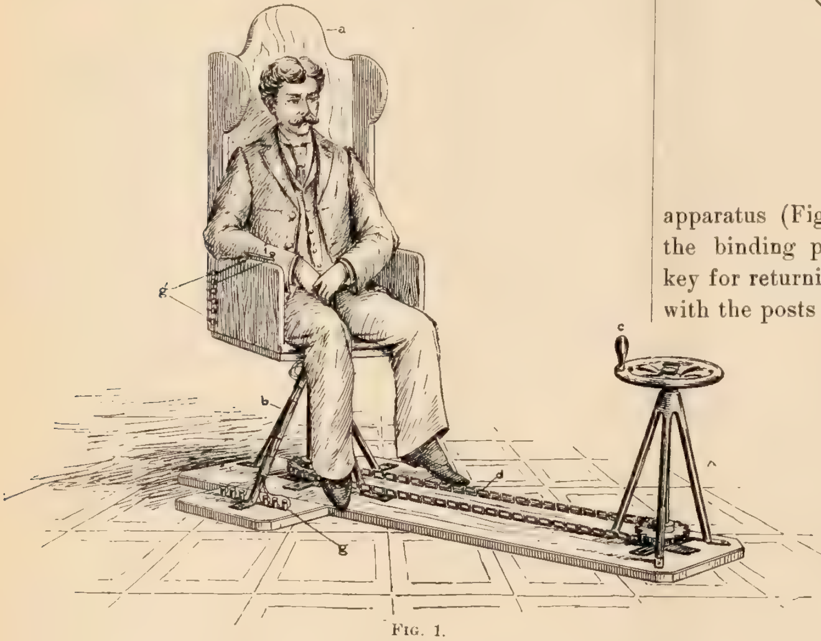

FIG. 1.

It is evident from the cut and foregoing description that turning the crank handle (*c*) is sufficient to rotate the chair (*a*). The gearing is, in fact, so arranged that one turn of the crank causes one revolution of the chair.

To enable the occupant of this chair to transmit the necessary signal to the recording apparatus (Fig. 3), I have resorted to the following arrangement :

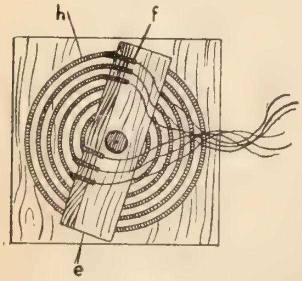

FIG. 2.

Upon the cross-bar (Fig. 2, *e*) are fastened six stout copper springs *f*, which are, in turn, connected with an equal number of binding posts (Fig. 1, *g*). These springs impinge against six circular tracks of copper (Fig. 2, *h*) secured on the under side of the bottom of the chair. Each track is carefully insulated from its fellows, and is connected by means of a gutta-percha-covered wire with one of the binding posts (*g'*, Fig. 1) on the side of the chair. From this disposition it is evident that the binding posts *g* are placed in direct communication with the binding posts *g'*. Now it is clear that the recording apparatus (Fig. 3) can be attached by insulated wires to the binding posts *g*; and in the same way the simple key for returning the signal (Fig. 1, *i*) may be connected with the posts *g*. For the sake of simplicity, a resonant sound, like that produced by the stroke upon a bell (Fig. 3), may be employed to give the signal. The extra binding posts are for attaching the apparatus required for the determination of the discrimination time in vertigo. This question of discrimination time I shall, however, reserve for a subsequent paper.

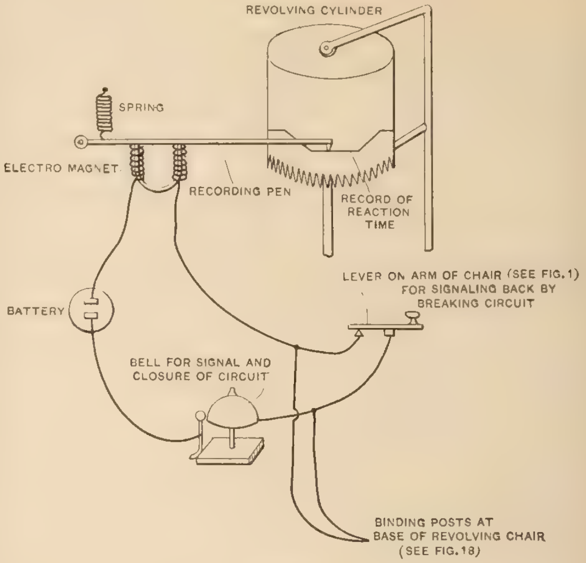
REVOLVING CYLINDER
SPRING
ELECTRO MAGNET
RECORDING PEN
RECORD OF REACTION TIME
LEVER ON ARM OF CHAIR (SEE FIG.1) FOR SIGNALING BACK BY BREAKING CIRCUIT
BATTERY
BELL FOR SIGNAL AND CLOSURE OF CIRCUIT
BINDING POSTS AT BASE OF REVOLVING CHAIR (SEE FIG.18)

FIG. 3.

The Reaction Time and other Psychical Phenomena in Vertigo.—As a result of numerous observations with this apparatus I have found that the reaction time in vertigo is increased to three and even four tenths of a second, according to the intensity of the vertigo. I may add that this intensity is directly dependent upon the rapidity of rotation of the subject. It follows, therefore, that in the determination of the reaction time we have a means of ascertaining with scientific accuracy the degree of intensity of the vertigo. It would be a manifest omission were I not to mention that something may also be learned regarding the condition of the mind during vertigo by the aid of self-observation, though only when the rotations are relatively slow, since introspection is extremely difficult, if not absolutely impossible, when the vertigo is severe.

In this way a decided diminution in the power of attention may be observed; the subject is quite unable to carry on protracted thought so far as the analysis of external impressions is concerned; yet, in spite of all this, most remarkable to relate, the power of introspection, or subjective analysis, remains but slightly if at all impaired, at least in minor degrees of vertigo. The last-named power is, however, likewise curtailed and even entirely lost in severe vertigo. This loss of the power of introspection is the immediate precursor of absolute unconsciousness.

Finally, the ability to perform tasks necessitating rhythmical and delicate motor co-ordination, as in playing upon a musical instrument, is lost in the severer degrees of vertigo. It is true that it is often possible to execute a series of automatic or semi-automatic acts, as exemplified in a simple scale; but to play a composition necessitating a conscious demand of the memory, or to improvise, is out of the question.

In conclusion, it may be said that while there is a certain obtunding of sensibility in the severer degrees of vertigo, complete analgesia appears only with the advent of total unconsciousness.

Physical Phenomena Present in Rotary Vertigo.—But the reaction time is by no means the only phenomenon of which we are able to take cognizance by the aid of the rotary chair. In the first place, since the vertigo persists for a short time after cessation of rotation, it is possible to make some observations as to the subject's physical condition. Acting upon this principle, I was able to ascertain that in vertigo of moderate intensity the pulse, while somewhat increased in rapidity, is diminished in fullness. I have also observed a diminution in the rapidity of respiration; but this is not a constant phenomenon.

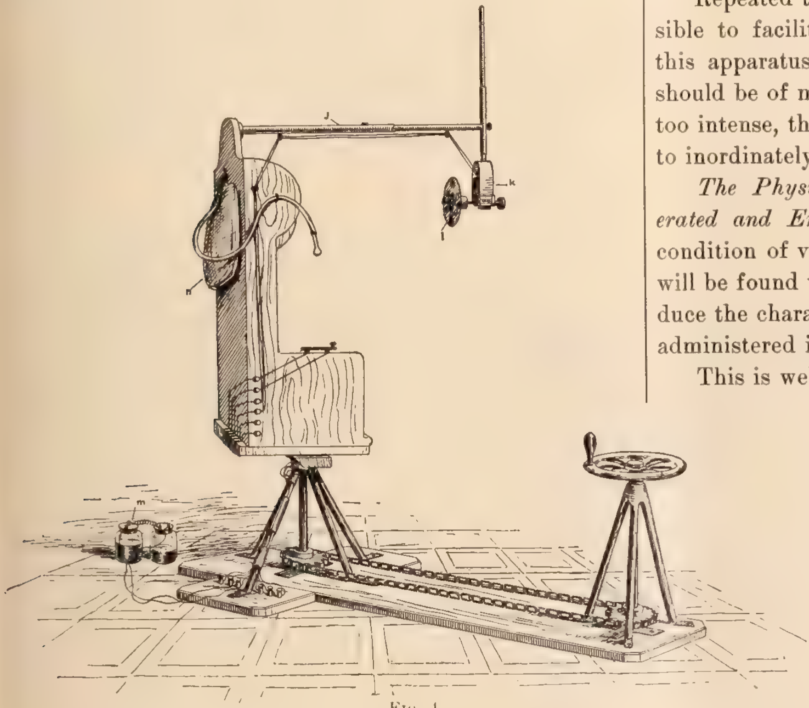

Fig. 4.

Again, when the vertigo is severe, the inhibitory effect of the brain upon the spinal cord is diminished to such a degree that reflex action, and especially the patellar tendon reflex, is decidedly exaggerated. There is likewise diminished vigor of voluntary muscular contraction, as shown by the dynamometer.

Finally, in severe vertigo there is apt to be facial pallor accompanied by a marked dilatation of the pupils. Nausea, too, sometimes occurs, especially when the eyes are fixed upon surrounding objects. The last-named symptom may usually be avoided by the previous administration of the bromides in large doses and by requiring the subject to keep his eyes shut; or, when this is not done, darkening the room so that surrounding objects are rendered invisible. I may add that when the object looked at revolves with the chair nausea is much less readily produced.

Artificially Induced Vertigo as an Aid to Hypnotism.—After ascertaining the facts previously noted the thought occurred to me that vertigo might prove of service as a means of facilitating the induction of the hypnotic state.

To test the feasibility of the idea, I caused to be attached to the back of the revolving chair the bracket *j* (Fig. 4), consisting of a horizontal and vertical arm, the latter supporting at its lower extremity the small electric motor, *k*, which is used to revolve a series of mirrors, arranged on the disk *l*, shown also in Diagram 4. As both the horizontal and vertical arms of the bracket may be lengthened or shortened within reasonable limits, it is possible, when the occupant of the chair fixes his gaze upon the mirrors, to obtain a certain amount of ocular convergence, whereby the occurrence of hypnosis is somewhat facilitated. Adequate current for the motor is afforded by a few cells, *m*, which transmit their energy through the circular railway, springs, and insulated wires previously described.

Repeated trials have convinced me that it is indeed possible to facilitate the induction of the hypnotic state by this apparatus; but I have also learned that the vertigo should be of moderate degree, since, when the dizziness is too intense, the subjective sensations engendered by it tend to inordinately diminish the subject's power of attention.

The Physiological Effects of Nitrous Oxide are Accelerated and Enhanced by Vertigo.—If a person while in a condition of vertigo is allowed to inhale nitrous oxide, it will be found that much less of the gas is required to produce the characteristic phenomena than when the agent is administered in the ordinary way.

This is well shown by the following observation:

Mr. N. E. has long been addicted to the periodic abuse of alcohol. When recovering from one of his "sprees" the depression consequent upon the abrupt withdrawal of the stimulant is much relieved by inhalations of nitrous oxide at intervals of ten or fifteen minutes. To dispel the depression and produce slight exhilaration, from three to four gallons of the gas are necessary—a quantity considerably in excess of what would be required to evoke the same phenomena in persons unaccustomed to alcoholic abuses. Yet, when N. E. seats himself in the revolving chair, and while rapidly rotated inhales the gas from the rubber receptacle (*n*), but a gallon and a half of the nitrous oxide are required to produce a feeling of *bien-être*.

The mode of attaching the rubber receptacle and tube to the chair is sufficiently shown in Fig. 4.

Mrs. J. L. V., who has been under my care for functional nervous trouble, states that she has had several teeth extracted under nitrous oxide, but says it has always affected her disagreeably. During the period of anæsthesia she is subject to hallucinations of a more or less disagreeable character, and even after the recovery of consciousness she invariably drifts into a lacrymose condition lasting several hours and bearing a close relation to hysteria. She has, moreover, been informed by the dentist that the amount of gas required to produce insensibility is considerably above the average. On one occasion the inhalation of the gas was followed by the usual hysterical symptoms, albeit much abbreviated, and these were in turn succeeded by morbid somnolence lasting half a day.

Such cases, though not numerous, are nevertheless occasionally met with. From a neurophysiological standpoint they are certainly interesting. Being impressed by the paradoxical nature of the phenomena, I one day asked this lady to sit in the revolving chair and inhale the nitrous oxide gas while subjected to from thirty to forty rotations a minute. To this she readily consented, as well as to the clamping of her nostrils to prevent the entrance of air.

In an astonishingly short time, and after the inhalation of but a moderate amount of gas, the tube fell from her mouth and she was unconscious. She would indeed have fallen to the floor had I not forestalled the possibility of such an occurrence by encircling her waist with a broad belt secured to the back of the chair.

On regaining consciousness she declared that she had had no hallucinations whatever, and that the entire experience had been without disagreeable incident. What subsequently impressed her as most remarkable, however, was the absence of all hysterical manifestations or somnolence. These she had grown to regard as necessary after-evils.

It would be easy to multiply cases showing how vertigo facilitates the occurrence and enhances the physiological effects of nitrous oxide as well as ether. This would involve, however, but a needless repetition, and I shall therefore content myself with briefly summarizing the salient results of my researches.

Summary.—1. In vertigo, however slight, consciousness is always impaired.

2. This impairment increases in the direct ratio of the intensity of the vertigo.

3. Though the clinical causes of vertigo are manifold, they have at least this in common, that they one and all are capable of interfering, either directly or indirectly (reflexly) with cortical function, with consequent impairment of consciousness. To regard vertigo as essentially a cortical derangement, of either direct or indirect origin, accords with the experimental data and is clinically explanatory.

4. The condition of psychical instability and sluggishness engendered by vertigo favors the occurrence of hypnosis.

5. A person in a state of vertigo is thereby rendered unusually susceptible to the influence of nitrous oxide, ether, and other agents of like character; but, if the anæsthetics are first inhaled in moderate quantity (without inducing unconsciousness), it will be found that when an attempt is made to induce vertigo the latter is diminished or entirely prevented. The significance of this last fact from a neurophysiological standpoint is apparent.

53 West Thirty-eighth Street.

OPERATIVE SURGERY
IN THE SERVICE OF WILLIAM T. BULL, M. D.,
AT THE NEW YORK HOSPITAL,
From July 1, 1890, to January 1, 1895.

By E. M. FOOTE, M. D.,

LATE HOUSE SURGEON.

(*Continued from page 266.*)

OPERATIONS UPON THE INTESTINE.

Four operations for fæcal fistula, one for gunshot wounds of the large and small intestine, and two colostomies for carcinoma of the rectum make up the operations upon the intestine alone.

Among these was only one death, in the case of the gunshot wound. In two of the cases of fæcal fistula the intestine was resected and a circular enterorrhaphy performed. In a third the opening in the cæcum was sutured, and the fourth healed without a major operation. The colostomies require no detailed description.

Case I. *Fæcal Fistula with Abscess; Incision and Drainage; Spontaneous Recovery.*—M. K., a girl, aged twelve years, presented herself with a fistula in the right iliac fossa, constantly discharging fæcal matter. Four weeks before her entrance she had had a severe inflammation in the neighborhood of the appendix, which had resulted in an abscess. This had been opened by a small incision and the wound had discharged daily both pus and fæces.

June 24, 1890.—Under ether anæsthesia a two-inch-and-a-half incision was made and exposed a cavity about as large as a hen's egg filled with purulent and fæcal matter. The cavity was irrigated and drained with gauze and a rubber tube. The abdominal cavity was not opened and the communication with the intestine was not found. The discharge soon lost its purulent character, but continued fæcal, and it was considered best to delay a radical operation until the patient had regained her strength.

July 19th.—She went home to return later for further treatment. In the mean time the sinus healed spontaneously.

Case II. *Gunshot Wound of Intestines; Thirteen Perforations; Laparotomy; Death.*—S. P., a man, aged thirty-seven years, on February 19, 1891, while in good health, received a single bullet from a 0·32-calibre revolver at a distance of five feet; three hours and a half later the abdomen was distended and tympanitic, except in the hypogastrium; the patient was anæmic, with a feeble pulse of 120 and a temperature of 97·8°. The bullet had entered an inch below the umbilicus. A free incision was made. The abdominal cavity was full of blood and a torn vessel in the mesentery was spurting. The bleeding was controlled. Ten holes in the small intestine and one in the large were sutured and the abdomen was closed. His condition for a time was improved, but failure and death occurred in twelve hours. The autopsy revealed two other wounds of the small intestine which had not been found.

Case III. *Fæcal Fistula following Strangulated Femoral Hernia; Circular Enterorrhaphy; Recovery.*—B. V., a woman, aged forty years, had had for two years a reducible left femoral hernia retained by a truss. Six days before her entrance, in a fit of vomiting, the rupture had been pushed so far out that it could not be replaced. There had been colicky pain, vomiting, and constipation since. On her entrance, on March 12, 1892, there was a small, tense, fluctuating tumor over the left Poupart's ligament, tender on pressure and giving an impulse on coughing. Temperature, 100°; pulse, 96. An incision under ether exposed a knuckle of small intestine constricted in about four fifths of its circumference—a typical Littre's hernia. Its gloss was gone and it seemed dangerous to replace it. The ring was enlarged externally, the implicated knuckle of gut drawn out, and a small glass rod passed through the mesentery to prevent the return of the bowel. Under antiseptic dressing the gut improved in appearance, and for four days it looked as if it would live. On the sixth day, however, it was perforated and a large quantity of fluid fæces escaped. As it was not known what portion of the small intestine was involved, an attempt was made to feed peptonized milk into the lower limb, but none was retained. A more thorough examination showed the whole large intestine to be filled with fæcal masses, great quantities of which were removed by copious enemata. The suggestion was unavoidable that an earlier treatment of this kind might have relieved the distention and have averted the perforation.

The general condition of the patient was at no time critical, and on March 28th, fourteen days after the relief of the strangulation, four inches of the gut without its mesentery were excised and a circular enterorrhaphy was performed. The incision was everywhere wide of the affected portions. The bowel was replaced in the peritoneal cavity and a strip of gauze led to the intestinal suture. Elsewhere the abdominal wound healed at once. On the fifth day the exhibition of a saline produced a normal evacuation. The suture line in the bowel never leaked, and cutaneous union was complete in a month.

The patient can not be traced.

Case IV. *Fæcal Fistula; Circular Enterorrhaphy; Recovery.*—Another circular enterorrhaphy for fæcal fistula was performed upon J. W., a man, aged fifty-five years. Seven months before the operation an abscess had formed in the right groin, probably the result of a strangulated hernia. This had been lanced and the acute symptoms had subsided, but a fæcal discharge persisted. The patient was otherwise in perfect health.

May 28, 1892.—An incision running upward three inches from the sinus exposed a knuckle of small intestine adherent to the abdominal wall. Two inches of the gut were excised, the cut vessels of the mesentery closed by an in-and-out suture, and the intestinal ends brought together by three rows of fine silk stitches, thirty in all, Lembert style. A small gauze drain was left in the wound. There was no fæcal discharge. On the fourth day an evacuation of the bowels was secured by magnesia, and in two weeks union was complete. Four months later in lifting a boiler the patient produced a small rupture in the scar. This has been controlled by a truss. Excepting this complication his health has been perfect.

Case V. *Fæcal Fistulæ; Laparotomy; Intestinal Suture; Recovery.*—F. G., a boy, aged thirteen years, gave a history of appendicular abscess breaking through the abdominal wall and into the sigmoid flexure. Eighteen months before his entrance there had been "peritonitis." Three months later an abscess broke in the right iliac region, which has since discharged fæcal matter. The same occurred in the left groin thirteen months ago. Water injected into the sinus in the right groin escaped with fæcal matter from the left. On his entrance the sinus in the left side was very small, but communicated with the one on the right, as was demonstrated by injection of fluid. Colored fluid injected per anum escaped from the right sinus before a pint had been used. His general health good.

March 16, 1891.—Under ether a three-inch incision was made just internal to the sinus on the right side. This incision opened the general abdominal cavity. The fistula was seen to enter the cæcum. This organ was separated from the anterior abdominal wall and its perforation closed by Lembert stitches. The appendix was long, contained a calculus, and was adherent to the sigmoid flexure. It was excised. The sinus on the right side was also excised, and both wounds were closed excepting where a bit of gauze extended to the cæcum. Four days later the left sinus began to discharge fæcal matter, and continued to do so intermittently for two weeks. A probe inserted into it seemed to enter the descending colon. On the fourteenth day there was a purulent discharge from the right sinus of distinctly fæcal odor. This continued only a week. In a month after the operation the wounds on the right side had completely healed and the sinus on the left was very small.

EXPLORATORY LAPAROTOMIES.

In the following twenty-five cases the abdomen was opened, but no radical treatment was performed. "Recovery" is here used to mean recovery from the operation, not the disease:

Case I. *Retroperitoneal (?) Sarcoma; Recovery.*—J. W., a boy, aged eleven years. No history of tuberculosis or traumatism. Two months before his entrance his mother had noticed lumps in the left groin and that the abdomen was growing large. On his entrance the lower part of the abdomen, but more on the left side than on the right, was occupied by a tense non-fluctuating tumor, slightly movable, and not particularly tender. A needle drew no fluid. Inflation of the bowel showed that the tumor lay in front of the sigmoid flexure and the

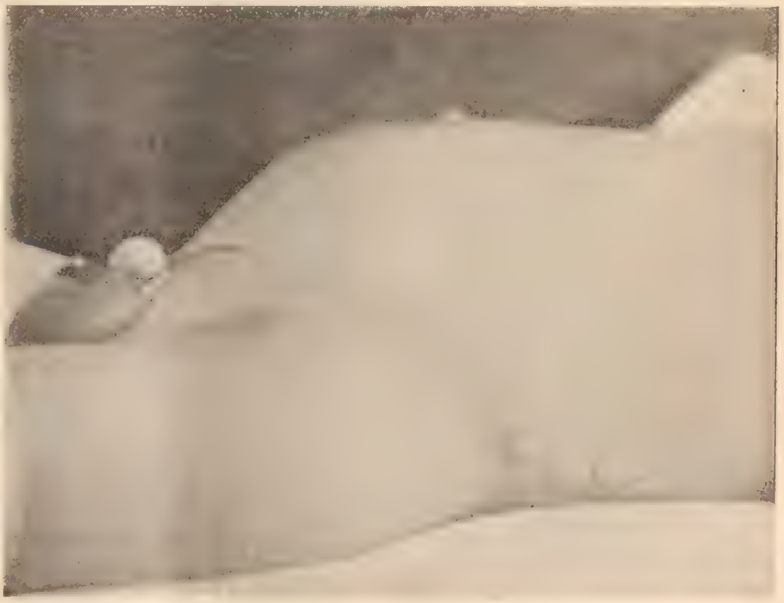

Fig. 6

lower part of the descending colon. The skin over the crest of the tumor was painfully stretched and the general emaciation was extreme.

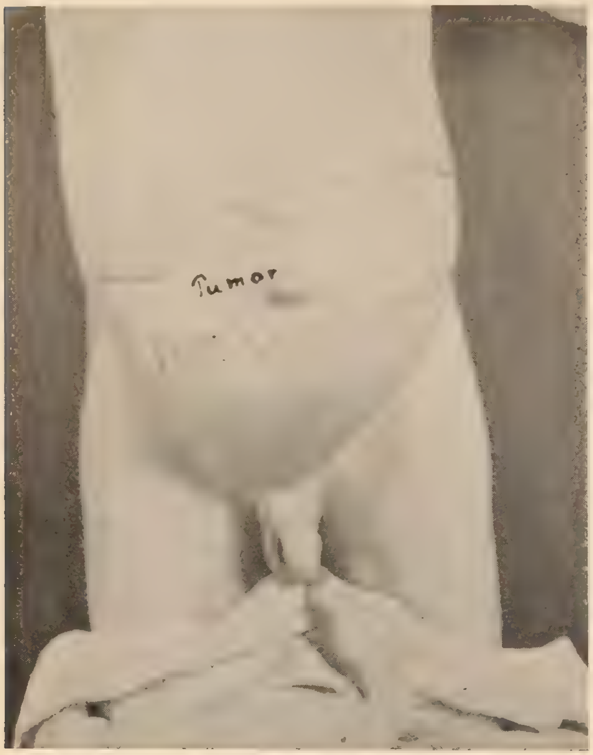

Fig. 7.

March 25, 1892.—A median incision revealed an intensely vascular tumor with a thin capsule, numerous adhesions, and many peritoneal metastases, two of which were excised for examination. Removal was not to be considered, and the profuse hæmorrhage from the thin-walled vessels which followed the separation of slight adhesions showed what would be the result of any attempt at enucleation. The wound was closed under great tension, but united, and the patient was carried home. Two months later his death was reported. There was no autopsy. The examination of the tissues removed at the operation showed the growth to be a medium-sized spindle-celled sarcoma. The drawings (Figs. 6 and 7) were made from photographs taken before the operation.

This case was made more interesting by a remarkably similar one occurring in the service six months previously and operated upon with a fatal result by Dr. Stimson in the absence of Dr. Bull. This also occurred in a boy, aged ten years (F. K.). There was no history of injury. He had been late in learning to walk, had always had a large abdomen, which for two months before his entrance had been rapidly increasing in size, while the general health had been as rapidly failing. He was kept under observation for two months as an operation seemed to promise little. Figs. 8 and 9 accurately show the physical condition. He had an enormous appetite, taking at least as much food as two healthy men. Twice he suffered an acute attack of abdominal pain accompanied by vomiting and fever up to 103·6°. No cause could be ascertained. As it was evident he could not live long with the tumor, Dr. Stimson determined to remove it, and did so on September 18, 1892. The tumor sprang by a large pedicle from the left side of the lumbar spine. It was retroperitoneal and the descending colon and the left ureter passed across the front of it. It was very loosely attached to the peritonæum and received its blood supply from its pedicle and not from the peritonæum. The vessels of the tumor were enormous—some of them as large as the little finger—and plainly visible through the normal peritonæum. The peritonæum was divided from above downward, the incision passing to the right of the left ureter, and the covering was shelled back from the tumor. Its pedicle was tied and fastened into the abdominal wound, which was quickly stitched together. The hæmorrhage was not great, considering the vascular character of the tumor, but collapse was immediate and profound, and despite every precaution for artificial heat and stimulation, during and after the operation, death resulted in thirty minutes. There was no autopsy. The tumor was a medium-sized spindle-celled sarcoma.

Cases II and III.—*Two Penetrating Wounds of the Abdomen in which no Injury was done to the Viscera are Recorded.* One patient died sixteen hours after the operation in delirium; the other recovered.

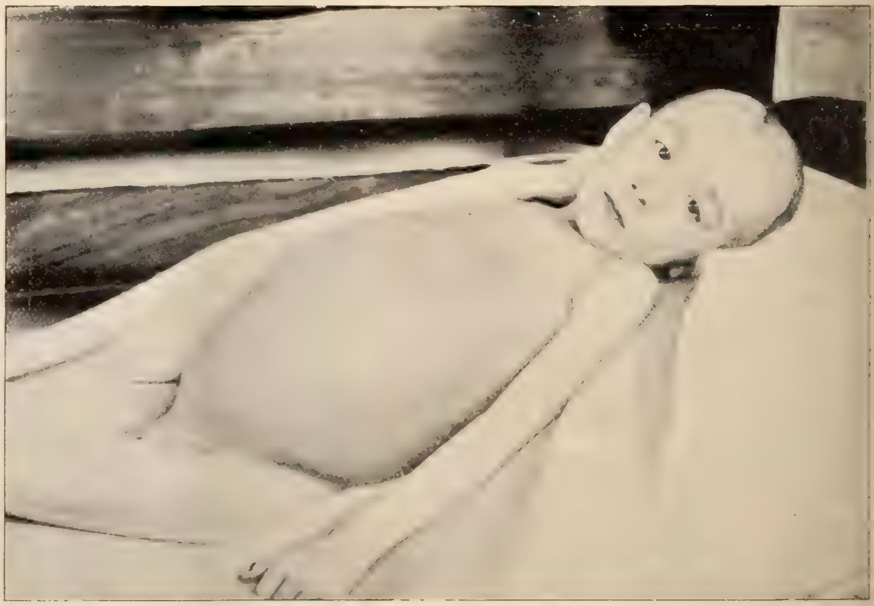

Fig. 8.

M. W., a man, aged forty-nine years, alcoholic. On October 4, 1890, while engaged in a drunken brawl, he was stabbed in the abdomen with a case knife. The wound was two inches to the left of the umbilicus. Under ether it was found to penetrate the abdomen by a minute opening in the peritonæum, through which a bit of healthy omentum protruded. The omentum was replaced and the wound closed. There had been free hæmorrhage from the arteries in the rectus muscle. The patient was attacked with œdema of the lungs and delirium tremens of a violent character, and died in sixteen hours. The abdomen contained about two ounces of fresh blood. There was no peritonitis nor injury of the contained viscera. The heart was very fatty, and chronic gastritis was also well marked.

M. M., a man, aged forty-one years, was hooked by a Colorado steer at about noon on April 14, 1892. He went at once to the hospital. There was no shock. From a ragged wound just below the tip of the ninth left rib a piece of omentum protruded an inch and a half. There was no hæmorrhage. The omentum was cleansed and reduced, and the wound closed with silk. Primary union resulted, and in twelve days the patient was about.

Case IV. *Inflamed Omental Stump; Recovery.*—T. B., a man, aged fifty years, was operated upon on February 8, 1890, for an irreducible femoral hernia of the right side. The sac contained omentum, which was tied with floss silk and excised. The wound healed without suppuration. Soon a painful mass could be felt in the right iliac fossa, and the general health was affected. Seven months later he presented himself for operation. There was no return of the hernia. The tender mass was of about the size of an egg and slightly movable. An incision showed it to be the stump of omentum adherent to the anterior abdominal wall and the appendix and ileum. It contained a small abscess cavity from which a few drops of pus escaped upon the peritonæum. The affected portion of omentum and the appendix were excised, silk ligatures being used. The abdomen was closed without drainage, and healed *per primam.* For three days there was persistent vomiting, with some pain and tenderness and induration, gradually subsiding under ice poultices.

Case V. *Peritonitis; Death in Six Days.*—C. C., a woman, aged thirty-two years, in fairly good health until two days before her entrance. While at dinner she had been taken with cramps in the abdomen. There had been no defecation since. On the following day vomiting had set in, becoming more violent and then fæcal. There had been no chill and fever was slight. The abdomen was not distended, but in the lower right quadrant was a resistant fullness.

May 31, 1892.—A median incision below the umbilicus showed some loops of small intestine to be empty; others in the right lower quadrant were much distended and adherent in the right side of the pelvis. Two such distended loops were separated from their pelvic attachments, with some loss of peritonæum. The second one was the lowest portion of the ileum. No cause for the distention could be found at the ileo-cæcal valve or elsewhere, and the separation of the adhesions was not followed by any relief of the distended (lower) portion of the small intestine, or any filling of its contracted (upper) portion. The abdomen was closed. The prostration progressed, high fever and delirium supervened, and death occurred on the sixth day. The bowels were once opened after the operation. An autopsy was refused.

Case VI. *General Suppurative Peritonitis; Death in Sixteen Hours.*—H. B., a girl, aged fourteen years. She had several mild attacks of abdominal pain. Three days before her entrance she had an attack of severe pain in right iliac fossa, followed by vomiting and slight diarrhœa. The abdomen was rigid and everywhere tympanitic, and the patient presented a well-marked picture of peritonitis, with an axillary temperature of 103°; pulse, 116. The same day (June 30, 1892) a four-inch vertical incision was made in the lower right quadrant. The abdomen was full of odorless pus, and the small intestines were covered with lymph. No cause for the inflammation was found. The cæcum presented no special adhesions. The appendix was not apparent. Owing to the wretched condition of the patient the search was not prolonged, but the abdominal cavity flushed with hot water and closed over a glass and gauze drain reaching into Douglas's *cul-de-sac.* The patient did not rally, and died in sixteen hours. No autopsy.

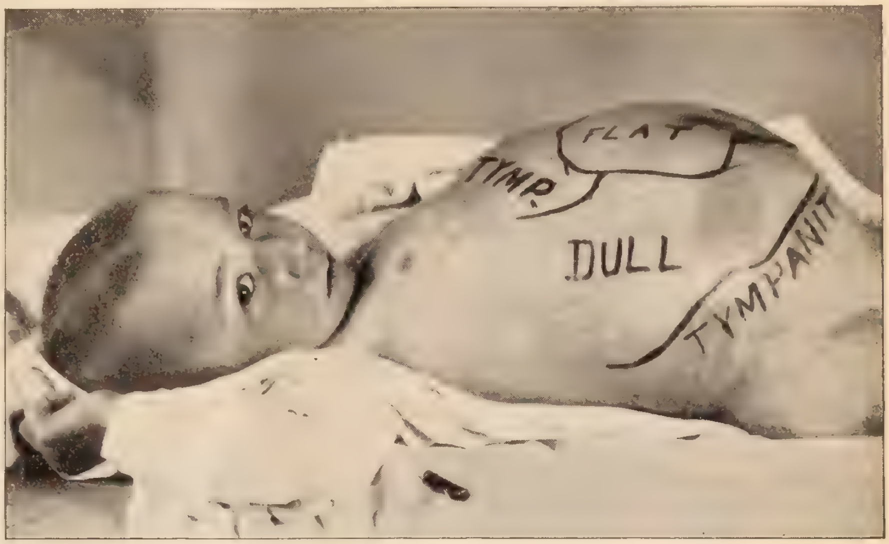

Fig. 9.

Case VII. *Tubercular Peritonitis; Recovery.*—C. G., a woman, aged twenty-two years, had for two months had swelling of the abdomen, gradually increasing, with pain on the right side, nausea and vomiting, night sweats and cough. On her admission the patient was without fever and in fair general condition.

November 27, 1893.—A three-inch median incision was made. The peritonæum was found thickened, and there was a large amount of blood-stained fluid with flakes of fibrin in the peritoneal cavity. The parietal and visceral layers of the peritonæum were studded with whitish nodules varying in size from that of a pin's head to that of a split pea. Fluid was evacuated and the abdomen closed. Union *per primam.* At her discharge, five weeks later, there was no evidence of reaccumulation of fluid, and the general health was much improved. A section from the parietal peritonæum was pronounced tubercular by the pathologist.

Roersch * reports the results after abdominal incision in three hundred and fifty-eight cases of tubercular peritonitis: 5·59 per cent. of the patients died from the operation; 14 per cent. were dead within a month; 70 per cent. were discharged cured, but only 22 per cent. could be ascertained to be cured at the end of a year, and only 15 per cent. at the end of two years; but many patients were lost sight of.

Case VIII. *Purulent Peritonitis; Death in Forty-eight Hours.*—F. A., a man, aged fifty-nine years, had suffered a year from pain in the epigastrium, vomiting, and constipation.

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* *Revue de chirurgie,* 1893, p. 529.

Three months later an exploratory incision above the umbilicus had revealed nothing and had not changed the symptoms. On his entrance to the hospital the abdomen was tense and tympanitic and a linear ulcer existed in the cicatrix between the ensiform cartilage and the umbilicus. The general condition was fair. Temperature, 99·4° and pulse 84.

January 1, 1894.—Under ether an incision was made in the old scar. The transverse and descending colon were much distended, while the ascending colon and small intestine appeared normal. A second incision, also in the median line, was made below the umbilicus, but did not clear up the diagnosis. The slightly thickened appendix was excised. Twenty-four hours after the operation there was a temperature of 106°, respiration 56, and pulse 132, with consolidation of both bases posteriorly and a tender distended abdomen. Death occurred in forty-eight hours after the operation. An autopsy showed an acute general suppurative peritonitis with no assignable cause for it. The stump of the appendix was in perfect condition, the inverted serous surface being already adherent.

Case IX. *Tubercular Degeneration of Mesenteric Glands; Recovery.*—D. C., a lad, aged twenty years, three years before had had typhoid fever. For two years there had been occasional abdominal pain localized for one year in the right iliac fossa. Temperature, 99·6°, pulse, 96. Tenderness in the region of the appendix. General health good. The case suggested relapsing appendicitis.

May 28, 1891.—Under chloroform an abdominal incision was made as for appendicitis. An adhesion to the cæcum was ligated and divided. The appendix lay in a mass of adhesions close beside the cæcum. The mesentery and omentum contained numerous nodules an inch long and smaller. Several were removed for examination. The abdomen was closed with a small gauze drain. Primary union and an excellent recovery took place. The nodules were found to be lymphatic glands in various stages of tubercular degeneration.

Case X. *Cyst of the Head of the Pancreas; Adeno-carcinoma; Metastases; Death; Autopsy.*—M. D., a woman, aged thirty-eight years, four years and a half before had noticed an irregular swelling to the left of the umbilicus, causing absolutely no symptom except the consciousness of its size. General health excellent.

March 30, 1892.—A five-inch incision to the left of the navel and mostly above it, exposed a nodular cystic tumor lying between the meso-colon and stomach. Through the greater omentum a needle was introduced which drew a thick brownish fluid resembling the fluid sometimes found in multilocular ovarian cysts. Owing to the tension of the cyst the fluid continued to escape through the needle puncture, so the abdominal cavity was protected and the cyst drained by a trocar and cannula and a rubber tube left in it. It proved to be a single thick-walled cyst firmly fixed to the surrounding organs and its removal was considered inadvisable. Adhesions quickly formed about the tube. Examination showed that the fluid possessed no digestive action. It continued to pour out in large quantities—one to two pints daily—the patient failed rapidly, and a hard growth soon became palpable in the region of the sinus. There was increasing constipation with abdominal pain.

November 17th.—An exploratory incision was made in the median line. The omentum contained nodules evidently secondary to the cystic growth, and the abdomen was closed. Thirty-six hours later the patient died of exhaustion.

The autopsy showed the original cyst to be part of an adeno-carcinoma of the tail of the pancreas. The growth lay between the stomach, pancreas, transverse colon, and spleen, being especially adherent to the pancreas and the transverse colon, although the wall of the latter was not invaded. The pancreatic duct was in no way affected, and the large daily discharge must have come from the growth itself. There were numerous secondary nodules in the omentum and liver. The other organs were free.

Case XI. *Carcinoma of Bile Duct with Metastases; Death from Peritonitis.*—W. S., a man, aged twenty-eight years, had had dragging pain in the epigastrium for six weeks, followed by loss of flesh and strength, and there had been jaundice for ten days. The liver extended two inches below the free costal margin and was plainly nodular. Through a two-inch incision made over the outer border of the rectus it was determined that the nodules felt externally were probably malignant. The gall bladder was shrunken and infiltrated. The wound was closed. The patient reacted slowly from the operation. On the second day he showed signs of peritonitis and died a few hours later. The autopsy showed a general peritonitis. The carcinoma was found in the gall bladder, liver, pancreas, and transverse colon. The peritonitis was apparently due to the rupture of an abscess in the wall of the transverse colon.

Cases XII to XV. *Carcinoma of the Stomach too Extensive for Radical Treatment.*—Three of these patients recovered from the operation but have not since been traced. The fourth died in nineteen hours, of collapse.

In the following table are grouped ten exploratory laparotomies, not because the lesions were the same in all, but because they all illustrate the difficulties which the abdominal surgeon encounters in diagnosis, treatment, and prognosis:

EXPLORATORY LAPAROTOMIES.

No.	Name, age, sex, date of operation.	Previous history.	Physical examination.	Operation.	After-treatment.	Remarks.
1	A. P.; 66 years; female; Oct. 26, 1892.	Two years profuse leucorrhœa and occasional uterine hæmorrhages; 6 mos., swelling in lower abdomen, gradually increasing; rapid emaciation.	T., 99·6°; P., 108. Pelvis occupied by a firm tumor, movable with uterus. Cervix normal. Sound not passed.	Ether; 6-in. median incision. Uterus much enlarged, and adherent to omentum and intestine. Separation of some adhesions causes a profuse hæmorrhage, with difficulty controlled by the cautery. Removal abandoned. Wound closed without drain.	Recovery from ether slow. Gradual failure without fever or signs of hæmorrhage. Death in 48 hours.	Autopsy refused. Examination through the wound showed a small amount of blood in the pelvis. The tumor was considered malignant, of the corpus uteri.
2	J. C.; 39 years; female; Nov. 22, 1892.	No syphilis nor tuberculosis; 5 years, blood and mucus in stools; loss of flesh and strength.	T., 99 ; P., 96. Large-sized rectal bougies pass to sigmoid flexure, where a small mass can be felt externally.	Ether; 4 in. incision along outer border left rectus. Lower bowel seems absolutely normal, and as far as bougie can be introduced there is no thickening. The mass felt externally in iliac fossa is considered the left ovary. Wound closed without drain.	Primary union. Upon laxatives and a carefully regulated diet the symptoms entirely disappear. The case was set down as ulcerative colitis.	

No.	Name, age, sex, date of operation.	Previous history.	Physical examination.	Operation.	After-treatment.	Remarks.
3	W. P.; 29 years; male; Oct. 31, 1892.	Ten weeks ago an attack of abdominal pain, followed by chill; repeated chills since; 8 weeks, pain in epigastrium.	T., 99·2°; P., 96. Liver dullness from 5th space to 1 in. below free border of ribs in mammary line. Left lobe extends 1½ in. below border of ribs, and is moderately tender. Abdomen otherwise normal.	Ether; 3-in. median incision below ensiform cartilage. Left lobe of liver enlarged, but not materially thickened. Its surface is covered with small yellow masses, one of which is excised for examination. Right lobe and gall bladder feel normal. Aspiration of the left lobe draws no fluid. Wound closed with small gauze drain.	Reacted well. Primary union except at drain site, which granulated well. Temperature never above 99·4° after operation, until discharge, 23 days after the operation. No chill, sweating, nor pain.	Specimen has no characteristic structure. Appears fibrinous. April 1, 1895: In perfect health. No symptoms since operation. Is out of doors all day.
4	P. H.; 40 years; male; Nov. 23, 1892.	Eight mos. ago an attack of vomiting and constipation; the latter has been growing more obstinate. On one occasion a bloody stool. Six weeks ago noticed swelling in left part of abdomen.	T., 99·6°; P., 100. In the left half of abdomen, from the costal margin to 2 in. below umbilicus and reaching nearly to the median line, is a hard tumor, flat on percussion, somewhat movable, not moving with respiration.	Ether; 6-in. median incision. The tumor lies in the mesentery, and has no connection with any organ. It is hard and somewhat nodular and yellowish—not unlike a mass of tubercular glands. No other masses are found in its neighborhood. Wound closed without drainage.	Reacted well. Highest temperature, 100°. On the 8th day wound opened spontaneously near the umbilicus and discharged a quantity of chocolate-colored fluid. The sinus persisted. Constipation increased, and gradually lost flesh and strength. Discharged on 23d day by request, and death resulted in a few days. No autopsy.	No tubercle bacilli in the fluid discharged.
5	R. L.; 19 years; male; Jan. 18, 1893.	For 7 mos. pain in right lumbar region. Tumor noticed for the first time one week ago.	T., 99·8°; P., 104. In fair condition. A hard mass, size of a child's head, occupies abdomen somewhat more on the right side. It is slightly movable, irregular in outline, and has a nodular surface; no tenderness.	Ether; 4-in. median incision. Omentum much congested and adherent to the underlying tumor, and bleeds freely upon attempted separation. The tumor lies in the mesentery of the small intestine. Its removal deemed impracticable. Closed without drain.	Reacted well. Primary union. Left hospital in 23 days, with tumor larger and less movable. Protrusion especially marked in right hypochondriac region.	
6	B. M.; 29 years; female; Jan. 23, 1893.	Several years ago was jaundiced. For several weeks has had attacks of epigastric pain, with abdominal distention and fluid fæces. Urine normal. Between the attacks distention is less, but never disappears.	Abdomen full; tympanitic except over colon. Palpation produces marked peristalsis, with gurgling. No tumor nor tenderness. Uterus retroflexed, otherwise pelvic examination is negative. In fair general condition.	Ether; 6-in. median incision. Small intestine greatly distended, and its coils in the pelvis adherent. Liver and gall bladder normal. Colon is empty. No abnormity about cæcum. Omentum atrophied till it resembles lattice work. No enlargement of mesenteric glands. Small intestine studded with numerous white spots, varying in size from a pin-head to a pea. One excised, and the opening closed Lembert style. Trocar puncture fails to relieve distention. Puncture closed with Lembert stitch. Considerable bloody fluid in peritonæum. Abdomen closed without drainage.	Reacted fairly well. Next day had temperature 103°, pulse 140. Failed gradually, and died with pulmonary œdema on the 4th day.	
7	C. B.; 70 years; female; Oct. 25, 1893.	Swelling of abdomen, gradually increasing, for one year past; no pain; loss of flesh and strength. Tapped 3 times in past 3 mos.; a thick, bloody fluid obtained.	T., 99·2°; P., 100. Anæmic and emaciated: abdomen distended and flat, except over colon; mass in left iliac fossa and smaller one on right side, between umbilicus and anterior superior spine.	Ether: 3-in. median incision; 2 quarts fluid escape. Omentum thickened and infiltrated with small nodular masses. The left ovary is the seat of a tumor the size of an orange. Abdomen closed without further investigation.	Reacted well. Primary union. At discharge, 15 days after operation, abdomen was as large as on entrance to hospital.	Abdominal fluid contained epithelial cells, but no tubercle bacilli. After return home was tapped every 3 weeks, about 18 pints of fluid being obtained. Progressive emaciation, and death in 5 mos. No autopsy.
8	B. L.; 31 years; female; Nov. 17, 1893.	Attack of epigastric pain and jaundice 1 year ago; 4 mos. ago noticed epigastric tumor; slight tenderness; has grown steadily; no vomiting; rapid loss of flesh and strength.	T., 100·6°; P., 92. Right upper quadrant of abdomen filled by hard nodular tumor, which moves with respiration. Its dullness is continuous with the hepatic dullness. On the right side it reaches to 3 in. below the umbilicus. In the median line it does not reach the umbilicus. Fair health.	Ether; median incision above the umbilicus. Peritonæum firmly adherent to the hard nodular tumor. Torn adhesion bled freely. Thorough examination impossible. Portion of tumor removed for examination. Wound closed without drainage.	Reacted well. Stitches out on 5th day on account of irritation. Gaping of skin. Small sinus persisted for 3 mos., until 3 silk stitches were discharged, then closed rapidly.	Microscopically the tumor is a small round and spindle-celled sarcoma—"fibro-sarcoma." April 8, 1895: For several months health has been excellent. No pain; occasional slight indigestion; good color, and has gained flesh. Tumor about as at entrance to hospital except that it is distinctly less prominent.

No.	Name, age, sex, date of operation.	Previous history.	Physical examination.	Operation.	After-treatment.	Remarks.
9	A. S.; 58 years; female; Nov. 6, 1894.	Twenty-five years gradually increasing abdominal swelling; 5 weeks, malodorous leucorrhœa; œdema of legs.	Ascites. Uterus much enlarged and adherent.	Ether; 4-in. median incision; 6 quarts of clear yellow fluid escaped. Uterus more firmly enlarged and immovable. Annexa normal. Abdomen closed.	Reacted well. Primary union. Recurrence of ascites.	A section taken from the cervix was pronounced "probably epithelioma." Died 2 mos. after operation. No autopsy.
10	L. B.; 43 years; female; Nov. 16, 1894.	Two years, pain in lower abdomen, with menorrhagia.	Good condition. Pelvis filled with non-fluctuating immovable tumors. Two movable nodules above the symphysis.	Ether; 4-in. median incision. Moderate ascites. An irregular reddish mass, the size of two fists and of malignant appearance, is attached to the uterus, omentum, and parietal peritonæum. Several uterine fibroids. Annexa appear normal and are excised. Abdomen closed.	Reacted well. Primary union. A slight rise of temperature in the 3d week was followed by a mural abscess. Six weeks after operation an abscess formed in the iliac region, and was opened.	June 18, 1895: General health excellent. Sinus in groin still discharges, and there is occasional discharge from the umbilicus.

PELVIC NEOPLASMS AND INFLAMMATORY TUMORS.

Under this heading are included fourteen cystic ovarian and parovarian tumors, one carcinoma of the uterus, eight fibromyomata of the uterus, and nineteen cases of salpingitis and oöphoritis, in all of which radical operative treatment was undertaken.

In a number of cases of carcinoma uteri treated in the wards in the period which is covered by this report, the disease was so far advanced as to make a radical operation useless. Some of these have already been mentioned among the exploratory laparotomies; others were simply curetted.

The operation for pyosalpinx is justly considered a severe one—in fact, an operation which is still on trial. Of the nineteen cases here recorded one or both appendages were in eighteen cases removed, and among these there were six deaths. This is to be said for the operation, however, that it was performed in every case as a last resort when milder measures had failed either at the patient's home or in the hospital. As far as it has been possible to ascertain the permanent result of these operations, the immediate relief, at least from pain, has not been so striking, but there has been a very marked gradual improvement in all symptoms, so that at the end of a year, especially when medical directions have been faithfully followed out, there has been a very satisfactory improvement if not a complete restoration to health.

PELVIC NEOPLASMS.

Number.	Disease, name, age, and date of operation.	Previous history.	Physical examination.	Operation.	After-treatment.	Subsequent history.
1	Multilocular ovarian cystoma; M. M.; 28 years; Oct. 4, 1890.	Married 10 years; never pregnant. Painless tumor for 8 mos.	Condition good. Symmetrical, fluctuating tumor in lower abdomen.	Ether; 3-in. median incision. Cyst presents and is evacuated, as is a second one through the first. Tumor is of left ovary; removed with tube. Small cyst shelled from right broad ligament. Glass and gauze drain.	Tube out, 2d day; gauze out, 6th day. Sinus 3 in. deep on leaving hospital, 3 weeks after operation.	Not traced.
2	Multilocular ovarian cystomata; C. K.; 67 years; Mar. 20, 1891.	Thirteen years, pain in iliac fossæ; 10 years, abdominal enlargement; 8 years ago tapped.	Condition good. Two movable cysts, about 7 in. in diameter, in left hypochondriac and right iliac regions.	Ether; 4-in. median incision. Left tumor exposed and brown fluid evacuated; pedicle ligated with floss silk and cyst excised. Right tumor treated similarly. Glass drain. Wound closed elsewhere.	Reacted well. 1st day, bloody fluid pumped from tube; 2d day, tube removed; 7th day, stitches out, primary union; 22d day, mural abscess at site of drain. Evacuated and closed rapidly.	Six months after leaving hospital a sinus at drain site. Not traced since.
3	Multilocular ovarian cystoma; P. B.; 27 years; Mar. 21, 1891.	Married 7 years; four children and two miscarriages. Four mos. ago, after childbirth, noticed abdominal tumor. Irregular and profuse menstruation.	Condition fair; emaciation. A movable, tense, hard tumor in lower abdomen, in one portion apparently fluctuating.	Ether; 3-in. median incision shows the tumor to be a very thin-walled cyst of right broad ligament. Is ruptured in removal; is excised with right tube and ovary. Glass tube in pelvis. Wound closed elsewhere.	Reacted fairly well. Tube out on following day; odorless fluid in its lower end. T., 102·2°; P., 130. Tympanites. 2d day, T., 104·2°; P., 132. Dejection after saline. Has troublesome bronchitis. 3d day, T., 103°; P., 144. 4th day, T., 103·4°; P., 144. Has well-marked areas of consolidation posteriorly.	Death in 5 days. Septic peritonitis and hypostatic pneumonia. The ovary contains, besides the cyst, a large hæmatoma.
4	Multilocular ovarian cystoma; K. O'C., single; 29 years; Sept. 5, 1891.	Three years, abdominal tumor with some loss of flesh and strength.	Condition good. Abdomen symmetrically distended. Tumor reaches to 3 in. above umbilicus, and appears to be due to two cysts.	Ether; 3-in. median incision. Two cysts of the left ovary evacuated and tumor withdrawn and excised; pedicle tied with silk. The right ovary is only slightly cystic, and is left. Abdomen closed without drainage.	Reacted well. Primary union. Sutures out in 8 days. Up in 3 weeks.	April, 1892, developed sarcoma of pelvis and intestinal obstruction. Tumor inoperable, and caused death July 21, 1892, 10 mos. after operation.

Number.	Disease, name, age, and date of operation.	Previous history.	Physical examination.	Operation.	After-treatment.	Subsequent history.
5	Multilocular ovarian cystomata; F. R.; 34 years; June 16, 1892.	Two years, abdominal enlargement without any symptoms.	Condition good. Lower abdomen occupied by a freely movable, dull tumor, giving no fluctuation wave.	Ether; 4-in. median incision. Cysts of left ovary are numerous and small; many evacuated; pedicle tied with silk and tumor excised. Right ovary is cystic and slightly enlarged; tied and removed. Closed without drainage.	Reacted well. Primary union. Left femoral thrombosis retarded recovery.	Not traced.
6	Teratoid ovarian cystoma; S. B.; 17 years; Nov. 5, 1892.	One year, lump noticed to left of umbilicus. Has grown rapidly since, giving no symptoms.	Condition good. Tense tumor reaching to above umbilicus, easily movable and flat on percussion; indistinct fluctuation.	Ether; 4-in. median incision. Tumor of left ovary, partly fluid, evacuated, withdrawn, and excised; pedicle transfixed and tied with silk. Right ovary has a cyst as large as an orange; removed and ligated as the left. Wall closed in layers.	Reacted well. Primary union. 10th day, sutures out; 21st day, up.	Bone and cartilage found in solid portion of the growth. May 15, 1895: Good health; no hernia.
7	Multilocular ovarian cystoma; E. S.; 23 years; Nov. 19, 1892.	Five years, abdominal swelling; tapped thirteen times. No other symptoms except absence of menstruation for last 6 mos.	Condition good. Symmetrical, fluctuating, abdominal tumor, flat on percussion.	Ether; 6-in. median incision. A small amount of ascitic fluid. Tumor is of the left ovary. About 5 gallons of clear fluid are drawn by trocar and tumor delivered. Adhesions slight; tumor and tube excised. Right ovary is cystic, and is excised without its tube. Floss silk used; abdomen flushed with boiled water. Wound closed.	Reacted well. Primary union. 14th day, sutures out; 21st day, up.	Not traced.
8	Multilocular ovarian cystoma; J. G., single; 29 years; Jan. 18, 1893.	Abdominal enlargement, 6 mos.	Condition fair. Irregular abdominal tumor in right lower quadrant; is only partially fluctuating.	Ether; 6-in. median incision. Moderate ascites; adhesions slight. Cyst, which is of the right ovary, is ruptured in extraction. Left ovary normal; not removed. Abdomen flushed with hot water and closed in layers.	Reacted well. Primary union. 8th day, sutures out; 21st day, up.	Not traced since.
9	Multilocular ovarian cystoma; M. F.; 27 years; Feb. 7, 1893.	Seven mos., slowly increasing abdominal enlargement; dysmenorrhœa and slight menorrhagia.	Condition fair. In lower abdomen, more on the right side than on the left, is a tense tumor, fairly movable and in places fluctuating, the size of a child's head.	Ether; 6-in. median incision. The left ovary, cystic and about the size of a lemon, is first removed. On the right side the cystic tumor is completely covered by the layers of the broad ligament, which are adherent to surroundings. It is shelled out of this capsule. After the tying and cutting of adhesions, pedicles tied with floss silk. A glass drain left in pelvis.	Reacted well. 1st day, glass drain out; 2d day, gauze drain out; 10th day, sutures removed. Primary union except at drain site. 26th day, up in clothes.	Twenty-seven mos. later, health excellent. No menses; no rupture. Has never worn a belt.
10	Multilocular ovarian cystomata; A. W.; Jan. 31, 1894.	Three years, abdominal enlargement. More rapid last 6 weeks, with symptoms of pressure and irregular menstruation.	General condition fair. Lower two thirds of abdomen occupied by a tense mass; dull on percussion and fluctuating in places.	Ether; 3-in. median incision. Much ascitic fluid escapes. Left ovary site of a very large multilocular cyst; adhesions slight; tumor excised and pedicle tied with floss silk. Right ovary had a cyst as large as a cocoanut, which is ligated and excised. No hæmorrhage; wound closed.	Reacted well. 8th day, sutures out. Primary union; entire relief of symptoms. 21st day, up.	May, 1895: Good health; no hernia.
11	Simple ovarian cyst, abscess of broad ligament; L. C.; 24 years; Feb. 24, 1894.	Four months ago, after miscarriage, was curetted. This was followed by chill, fever, and left iliac pain, with exacerbations at each menstrual flow.	Condition good. A tender mass in left fornix, fixed to uterus, which is displaced toward the right.	Ether; 3-in. median incision. Right ovary is cystic, and size of an orange; ligated and excised. A thick-walled, fluctuating mass filling left side of pelvis is emptied of its purulent contents *per vaginam* and rubber drain inserted. Abdominal wall closed.	Reacted well. 4th day, rubber tube into vagina changed for strands of silkworm gut. 8th day, sutures out of abdominal wound; primary union. 23d day, swelling much diminished; discharge slight.	Two mos. after operation, still a sinus from vagina into abscess cavity.
12	Teratoid ovarian cystoma; E. B.; 45 years; April 5, 1894.	Pelvic pain and dysuria and frequency of micturition for 2 weeks.	General condition good. A freely movable cystic tumor in right fornix as large as an orange. Uterus much enlarged, but movable.	Ether; 4-in. median incision. The right ovary contained a cyst about 3 in. in diameter. Both tubes and ovaries excised, the pedicles being tied with floss silk. The uterus was much enlarged, apparently from fibromyomatous growths. Abdomen closed.	Reacted well. Sutures out on 8th day. Primary union.	The cyst contained normal skin, with sebaceous and sudoriferous glands, bone, fat, hairs, etc., fatty débris. June, 1895: In good health; no hernia.
13	Multilocular ovarian cystoma; M. E.; 44 years; Nov. 10, 1894.	Four years, abdominal tumor, with increase of size and discomfort.	Lower abdomen filled by a freely movable, fluctuating tumor.	Ether; 4-in. median incision. Cyst tapped; 4 quarts fluid drawn off and cyst delivered. It was of the right ovary, and had a small pedicle. Excised with accompanying tube. Left ovary normal. Abdomen closed.	Reacted well. Sutures out on the 10th day; primary union.	

Number.	Disease, name, age, and date of operation.	Previous history.	Physical examination.	Operation.	After-treatment.	Subsequent history.
14	Multilocular ovarian cystoma; M. C.; 39 years; Dec. 1, 1894.	Six years, poor health; 8 mos., tumor in abdomen growing, with pain, chiefly during menstruation.	In the pelvis there is a fluctuating tumor size of child's bead, movable, and lying more on the right side; much smaller tumor in the left fornix.	Ether; 5-in. median incision. Omental adhesions separated and a cyst of the right ovary is brought out of the wound, ligated, and excised; the left ovary is also found cystic, and is excised; abdomen closed.	Reacted well. For 3 days there was a P. M. temperature of 101°, with a good pulse; constipation and vomiting. The condition grew worse, the abdomen became tender on the left side and tympanitic, and the patient died on the 8th day with a feeble, rapid pulse and a temperature of 105°. There was no autopsy, but the death was attributed to peritonitis.	
15	Epithelioma of cervix uteri; L. T.; 32 years; Mar. 14, 1891.	Menorrhagia 2 years; foul vaginal discharge, 6 weeks.	T., 100°; P., 100. General health good. Cauliflower growth 2 in. in diameter from anterior cervical lip; uterine canal, 3½ in.; organ movable; broad ligaments free.	Ether. Uterus drawn down and anterior lip and neoplasm excised. Iodoform gauze packing.	Second day packing changed.	
	Mar. 21, 1891.	Excision anterior lip of cervix 1 week ago.	T., 100°; P., 84. Cervix considerably contracted; a healthy ulcer at site of previous operation; condition good.	Ether; lithotomy position; circular incision at reflection of vagina upon cervix; broad ligaments clamped and divided and uterus removed; ligaments tied and clamps removed; iodoform gauze tampon.	Third day temperature 103°. Tenderness in left iliac fossa. Gauze changed and temperature fell; 8th day, up; 19th day, discharged in good condition. Has an induration in vagina thought to be cicatricial.	One month after operation no evidence of recurrence. Not traced since.
16	Fibromyoma of uterus; M. D.; 56 years; married; April 27, 1892.	Menopause 3 years ago; has flowed once since. Two years, painless swelling in abdomen, mostly on left side.	Condition good. In lower abdomen are a number of hard movable tumors, all closely connected to the uterus and to one another.	Ether; median incision. The tumors are free on the left side; on the right side they lie between the layers of the broad ligament, and are firmly adherent to the cæcum. Ecraseur applied and uterus amputated high up; stumps of broad ligaments divided and tied with floss silk; uterine stump treated extraperitoneally, being held up by a pin and packed about with gauze; abdominal wall closed with silk.	Reacted well; 6 hours later a sudden collapse; patient improved under stimulation, but sank again; 9 hours after operation abdomen was opened and found full of blood; pelvis tamponed with gauze, and a quart of saline solution injected subcutaneously; slight improvement, but death in 4 hours more.	Death in 13 hours.
17	Fibromyoma of uterus; M. S.; colored; 37 years; single; June 3, 1892.	Metrorrhagia 1 year; abdominal enlargement 6 mos.	Condition good. In lower abdomen a number of hard movable tumors, closely connected to each other and to the uterus.	Ether; median incision. Broad ligaments divided and their stumps tied in sections with interlocking floss-silk ligatures. Écraseur about part of the uterine fibroid, which is excised; right ovary not removed; peritonæum sewed over broad-ligament stumps and about uterine stump, which is held in position extraperitoneally by a pin; abdominal wall elsewhere closed.	Reacted well. Some signs of local peritonitis on 5th day relieved by ice caps; 10th day, sutures out, primary union; 15th day, pin out of stump; 24th day, up.	Wound cicatrized well. From portions of uterus remaining new tumors have formed, now half as large as at operation. A small hernia in upper part of wound. Has much less metrorrhagia than before. General condition good April 23, 1895.
18	Fibromyoma of uterus; C. B.; 53 years; single; June 4, 1892.	Seven years, an abdominal tumor, which has been growing rapidly since menopause, 3 years ago, with pain and vesical irritability.	Much emaciated; general condition fair. Abdomen greatly distended by a freely movable, lobulated, and apparently fluctuating tumor thought to be an ovarian cystoma.	Ether; median incision opens the bladder, which, though empty, is 4 in. above its normal position. Tumor, which is a uterine fibroid only slightly adherent to intestine, is lifted out, surrounded by an écraseur, and removed, as is a part of the uterus and of the bladder; latter stitched with catgut; uterine stump fastened in wound, which is closed above it; below it gauze is packed down to the bladder; catheter left in the urethra.	Recovered consciousness, but was very feeble; vigorous stimulation prolonged life only a few hours.	Death in 13 hours from shock.
19	Fibromyoma of uterus;	Loss of flesh and strength, pain and vesical irritability	Condition good. Nodular movable tumor, connected with uterus	Ether; median incision. Tubes and ovaries adherent to uterus; broad ligaments tied with interlocking	Reacted well. Sutures out 10th day; primary union; 28th day, écra-	May 11, 1895: Has worn abdominal belt; scar firm;

Number.	Disease, name, age, and date of operation.	Previous history.	Physical examination.	Operation.	After treatment.	Subsequent history.
	M. B.; 35 years; Oct. 7, 1893.	for a year. Tumor noticed first 2 weeks ago.	and reaching nearly to umbilicus.	floss-silk ligatures; uterus, with fibroid, cut off above écraseur; stump held in lower angle of wound with a pin and abdominal wall closed above.	seur sloughed away; up in 7 weeks; sinus healed in 11 weeks.	general health good; has gained 40 pounds; still has frequency of micturition.
20	Fibromyoma of uterus; M. J.; 42 years; Oct. 19, 1893.	Metrorrhagia 3 years; for 2 years a hard tumor has been steadily growing, with increasing pain and tenderness.	Condition fairly good. A smooth, hard tumor occupies lower abdomen, reaching nearly to umbilicus; it is freely movable with the uterus.	Ether; median incision. Broad ligaments secured by interlocking floss-silk ligatures, and écraseur passed above cervix; uterus and appendages removed; peritonæum closed and wound above the stump sutured, a pin being passed through the stump to hold it in position.	Reacted well. Tenth day, sutures out; primary union; great vesical irritability; pin out 21st day; left the hospital 8 weeks after operation, with a small sinus, in good general health, vesical symptoms having disappeared.	Eighteen mos. later in excellent health.
21	Fibromyoma of uterus; A. S.; 34 years; Mar. 4, 1894.	Menorrhagia for 10 mos.; profound anæmia.	Uterus enlarged and adherent; sound enters canal 4 inches.	Ether; median incision. Uterus enlarged as a whole. It is so firmly fixed that its removal from pelvis is not accomplished. Both tubes and ovaries excised; chain ligatures of floss silk; wound closed.	Reacted well. Primary union.	Three mos. later the uterus had markedly diminished in size.
22	Fibromyoma of uterus; C. B.; 40 years; Mar. 17, 1894.	Ten years, sacral pain and tumor, growing slowly till past 2 years; since then rapidly; menstruation regular; loss of flesh and strength.	Abdomen much distended; fluctuation in lower portion; uterus reaches to umbilicus.	Ether; 4-in. median incision exposes uterus and allows escape of ascitic fluid. Cyst in fibroid tapped, and several pints of dark fluid escaped. Incision enlarged to 10 in., and immense pedunculated fibroid delivered and excised; tubes and ovaries next excised, and then the uterus, the stump being treated extraperitoneally and the abdomen closed around it.	Reacted well. Sutures out on the 9th day; primary union; écraseur removed on the 18th day; wound entirely healed in 5 weeks, the patient having gained flesh and strength.	Not traced.
23	Fibromyomata of uterus; cystic ovary; K. C.; 34 years; Nov. 6, 1894.	Six mos., swelling of abdomen, with menorrhagia and irritation of bladder.	Condition good. The uterus is fixed, nodular, and fills the pelvis.	Ether; 3-in. median incision. There are several fibroids of the uterus, the largest being the size of a small orange, but the adhesions are so firm that removal is not attempted; the ovaries and tubes are ligated and excised; the left ovary was cystic; abdomen closed.	Reacted well. Stitches out the 9th day; primary union.	June, 1895: In good health.

OVARIAN CYSTOMATA.

Diseased ovaries were removed from fourteen patients. Dermoid cysts were present in two cases, a simple cyst in one, and the remaining cases were multilocular cysts.

Two of the patients operated upon died—both of peritonitis.

Case III presented interesting diagnostic features. Abdominally it appeared like an ovarian cyst; by vaginal examination it possessed all the characteristics of a fibromyoma except the enlargement of the uterus. A history of profuse and irregular menstruation helped to confuse the diagnosis still more. The explanation was evident at the operation; an ovarian cystoma about eight inches in diameter contained in its wall on the vaginal side a hæmatoma as large as a man's fist. The patient had been delivered of a full-term child three months previously, and the tumor had been first observed after the birth of the child. The hæmatoma was undoubtedly due to a rupture of one of the nutrient vessels of the cyst at the time of labor. The cyst ruptured during removal, but it is more reasonable to suppose that the septicæmia which followed was the result of the debilitated condition of the patient and some failure of asepsis, than to attribute virulent properties to the fluid of this simple ovarian cyst. The end was hastened by a hypostatic pneumonia.

In Case IV the left ovary and tube were removed, and while the right ovary was slightly enlarged and cystic, on account of the youth of the patient it was left. The operation was perfectly successful, and the patient left the hospital in a month. Six months later an enlargement in the lower abdomen began to cause symptoms of obstruction. The abdomen was opened and the pelvis was found filled with malignant masses growing from the right ovary, and there were already many secondary nodules in the omentum and intestines, so that radical treatment was impossible. Death occurred on July 21, 1892, ten months after the ovariotomy. The tumor was pronounced sarcoma.

In Case VII the rapidity with which so large a cyst refilled after tapping was remarkable. The patient was only twenty-three years old, and had noticed the abdominal swelling only five years, but during this period the cyst had been tapped thirteen times and contained at the time of operation over forty pounds of fluid.

In Case IX the tumor, which is described as of the size of a child's head, had been noticed only seven months, and had caused no other painful symptoms than dysmenorrhœa and slight menorrhagia, but on operation it was seen not only that its development had been almost wholly within the layers of the broad ligament, but that a degree of inflammation had been set up sufficient to establish firm adhesions between this broad-ligament capsule and the surrounding tissues, cæcum, small intestine, and parietes. By a sort of shelling process the cystoma was removed, and the recovery was speedy.

Case XI was complicated by the existence of an abscess in the broad ligament on the opposite side from the multilocular ovarian cystoma. This was drained *per vaginam*, a rubber tube left in, and the abdominal wound closed. Primary union resulted without an untoward symptom. When the patient left the hospital in the fourth week the sinus into the vagina persisted. She has not been heard from since.

(*To be continued.*)

THE TREATMENT OF GOÎTRE AND EXOPHTHALMIC GOITRE BY THYREOID EXTRACTS AND DESICCATED THYREOIDS.*

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I feel it almost necessary to apologize to this association for bringing before it so old a subject, but as my own experience in the medicinal use of the thyreoid gland is comparatively recent, and as there are many things about the subject not yet settled, I think it possible that it may be of interest to some others of this association as well as to many practitioners.

In looking over the histories of my private patients for the last fifteen years I find eighty-one cases of bronchocele and exophthalmic goître that I have treated, sometimes with very indifferent success, but often with most gratifying results.

My usual plan of treatment has been to place the patient affected with goître upon the iodide of potassium, in doses of from five to ten grains in water after each meal. In the course of two or three weeks, if there has not been decided amelioration of the symptoms, this has been substituted by the tincture of iodine, given in doses of from five to twenty-five drops, which was placed in a capsule just before the patient took it, the dose being followed by a full glass of water, and given three or four times a day. Five drops were given at a dose the first day, six the second, and so on until the maximum dose was reached. If this did not speedily effect diminution in the size of the gland, I have also injected the enlarged thyreoid with a three- to five-per-cent. solution of carbolic acid in glycerin and water, using from twenty to thirty or even fifty minims of the solution at each injection, usually about thirty minims once a week.

Since the thyreoid extract was recommended by G. R. Murray in October, 1891, and the entire gland by F. Howitz in March, 1892, I have been much interested in the report of cases treated by this method, but on account of the inconvenience of obtaining the thyreoid juice and from fear that it might become contaminated before used, I have not employed it. It was only recently that my attention was directed to the desiccated thyreoids as prepared by Armour & Co., which, from the reputation of this firm for doing whatever it does in the best possible manner, I concluded would be reliable. I procured some of the desiccated thyreoids about ten weeks ago and began their administration to two or three patients who were then under my care. I have since used the remedy all told in six cases of goître, the histories of which I will presently give.

The employment of these animal products seems to have had its origin in the experiments of Ewald and Schiff, who, in 1887, removed the thyreoid gland from dogs, and found that death occurred after a period of hypnotic apathy, followed by tetanic contractions of muscles.

Schiff found that by removing the two lobes at intervals of twenty-five to thirty-five days the animal might survive. Ewald also found that a thyreoid extract injected into a healthy dog hypodermically caused a similar but temporary condition of apathy.

The survival of some thyreoidectomized animals may have been due to accessory thyreoids, as pointed out by F. Fuhr. A close relation between the normal action of the nervous system and functional activity of the thyreoid was here apparent, but whether it was due to the presence in the blood of a substance secreted by the thyreoid or whether the glands metamorphosed something derived from other organs was not determined.

Horsley's experiments on monkeys indicated that the changes due to the removal of the thyreoid were caused by impaired nutrition. His further conclusion that the gland had a hæmatopoietic function is disputed by Virchow and Waldeyer.

As to the ætiology of goître, Lustig professes to have found a specific bacillus in water from the Aosta Valley, where cretinism and goître are endemic, but it seems very doubtful whether this theory can be substantiated.

As pointed out by the Reverdins, of Geneva, removal of the thyreoid in man is followed by myxœdema, and in children by arrest of development. Sanquirico and Oreccia note that herbivorous animals stand the removal of the thyreoid better than carnivora. Biondi, basing his opinion on histological study, maintains that the alveoli of the thyreoid secrete a colloid material which passes into the lymphatic channels. Albertoni and Tizzoni state that the blood-corpuscles acquire in the thyreoid the power of fixing oxygen.

Mobius contrasts Graves's disease with myxœdema, the former being due to excitation and the latter to arrest of the functions of the thyreoid. Ord says that myxœdema, sporadic and endemic cretinism, cachexia strumipriva, and operative myxœdema of animals are all due to annihilation of the function of the thyreoid body.

The myxœdema committee, appointed by the Clinical Society of London in 1887, reported, after an exhaustive study of this disease, that one condition common to all consisted in destructive changes in the thyreoid.

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* Read before the American Laryngological Association at its seventeenth annual congress. For the discussion, see page 245.

William Robinson, in the *British Medical Journal*, vol. i, 1893, tabulates the following conditions associated with or resulting from deficiency of the thyreoid secretions:

1. Cretinism.
2. Congenital goître.
3. Atrophy of the thyreoid gland in childhood (semicretins).
4. Goîtrous degeneration symptoms in proportion to the amount of the thyreoid gland destroyed.
5. Extirpation of the thyreoid causes cachexia strumipriva.

The use of the thyreoid gland as a medicament was naturally suggested by the ascertained pathology of myxœdema, and the relation of myxœdema to goître doubtless suggested its use in the latter. Among the earlier experiments Eiselberg saved two animals from the development of myxœdema after removal of the thyreoid by grafting a thyreoid under the peritonæum. The first operation on man to an account of which I have had access was that reported by M. Lannelongue, of Paris, in the *Transactions of the Biological Society*, March 7, 1890. This consisted in the transplantation of two thirds of a sheep's thyreoid subcutaneously under the breast. In England, Victor Horsley, following the experiment of Eiselberg (*British Medical Journal*, February 8, 1891), suggested grafting the thyreoid gland.

The first successful transplantation of the gland in England was performed by J. W. Collins, May 2, 1892, at the Temperance Hospital, Hampstead Roads. He reported that in cases so treated menorrhagia, headache, and melancholia were relieved in twelve hours. His ultimate results are not recorded. The permanence of effect depends upon the vitalization of the gland. If the gland becomes absorbed, the effects are temporary.

G. R. Murray (*British Medical Journal*, October 2, 1891) suggested the hypodermic use of thyreoid juice made by mincing a gland from the sheep, covered with one cubic centimetre of equal parts of glycerin and a five-per-cent. solution of carbolic acid, and straining or decanting the pinkish juice that rises on standing twenty-four hours. Of this juice enough should be used to supply the normal secretion of the thyreoid gland, which he estimates at about one minim a day, but the exact dose was not determined.

F. Howitz, professor of clinical surgery at Copenhagen, claims priority in the internal use of the entire gland (March, 1892).

Dr. H. W. G. Mackenzie, in 1892, suggested the internal use of two fresh glands daily, minced with beef tea or with glycerin; later to be taken twice a week, then at longer intervals. No ill effects were recorded; but when a large amount was taken for several days the pulse was increased in frequency and the heart was apparently somewhat enfeebled.

The results of the treatment of myxœdema by thyreoids seem favorable when the glands are given internally, or hypodermically in the form of a carbolized glycerin extract, or in the form of desiccated thyreoids, the dose depending upon the concentration of the preparation.

The use of this substance in obesity was reported by H. W. G. Mackenzie in the *British Medical Journal*, July 21, 1894; but the results were doubtful. His patient lost eight pounds and a half during the first month, but subsequently gained five pounds within three months, although the remedy was still continued. He had no bad effects from the remedy, but thought it had little influence on the condition.

W. Towers-Smith, in the *British Medical Journal*, July 14, 1894, reports a case of obesity improved by the remedy, though it caused some illness and he considered it unsafe. Of Ewald's three cases, reported in *Berl. klin. Woch.*, January 14 and 21, 1895, the first patient exhibited no change, the second lost 3·5 kilogrammes, and the third lost 9·2 kilogrammes; this case had a superficial appearance of myxœdema, but not the characteristic symptoms.

I speak of the use of these remedies in myxœdema because this is the first disease in which they were considered of benefit, though I have had no experience with that affection. I speak of their use in obesity because reports show that they sometimes have a good deal of influence upon the weight; but I desire specially to call attention to the medicinal use of the thyreoid gland in the treatment of goître, and incidentally in the enlargement of the thyreoid existing in what is known as Graves's disease, or exophthalmic goître. Reported cases of goître treated by thyreoid glands seem somewhat rare in medical literature, though, no doubt, there have been some that I have not been able to discover in the journals to which I have had access in the Newberry Library, of Chicago.

As late as April 14, 1894, the editor of the *British Medical Journal*, vol. i, page 839, said, in answer to a query as to the effect of the thyreoid treatment, that "only amelioration has been noticed, as far as we are aware, and no actual cure in exophthalmic goître"; but Dr. P. Bruns, in *La Semaine médicale*, 1894, vol. xiv, page 968, reports the cure of nine cases of goître out of twelve treated. He used an extract of raw glands, in doses of one and a quarter to two and a half drachms, every two to eight days. Parenchymatous enlargement was reduced, but cysts were not affected.

W. B. O. Ferguson, in the *British Medical Jourual*, vol. ii, 1894, reports a case of exophthalmic goître improved by the internal use of a quarter of a thyreoid gland twice a day. Treatment was begun on the 14th of December, 1893, and extended to July, 1894, but it had to be discontinued for a short time on account of diarrhœa and nausea.

A. G. Auld, of Glasgow, reports in the *British Medicœl Journal*, July 7, 1894, a case of exophthalmic goître of two years' standing, in which the thyreoid was much enlarged, with slight exophthalmia. This was treated by him and Dr. Charteris with Burroughs and Wellcome's thyreoid tabloids, given every three days. The dose was increased to two tabloids daily for nine days. The patient was nauseated and perspired freely. They thought the tabloids caused increase in the Graves's disease, due to an increase in the thyreoid secretion.

H. W. C. Mackenzie reports little effect in a case of exophthalmic goitre associated with obesity. As to the toxic action of the thyreoids, Ewald noted a case of glycosuria during treatment, which ceased when the remedy was discontinued.

In *La France médicale*, January 25, 1895, we find the statement that "thyreoid juice poisons the heart and may cause death by syncope, one adult and two children having died in Paris hospitals from its exhibition. The juice has a cumulative effect, like digitalis, and great care is necessary to avoid excitement or exertion during treatment and for some time afterward. Sudden deaths in England took place several days after treatment was discontinued. The pulse may reach 110, or even 160, under exertion during treatment, and its rapidity and quality should be carefully watched."

In the *Revue des sciences médicales* of April 15, 1895, E. Gley notes as the result of administration of thyreoid extract in some cases loss of weight, in others signs of Basedow's disease.

Langendorff, in 1889, noted sudden death, with coma and convulsions, following hypodermic or intravenous injections in animals of the thyreoid extract.

Alonzo's and Horsley's experiments are negative.

Fred Gourlay, *British Medical Journal*, vol. ii, 1892, expresses the opinion that the active principle of the thyreoid extract is a globulin which may be prepared by mincing and drying the gland at a low temperature. Ewald suggests peptic digestion and dialysis.

The preparations used in the various experiments just referred to were the thyreoid tabloids, five grains each, made by Burroughs, Wellcome & Co.; thyreoid extract, by Brady & Martin; thyreoidin powder, by Allen & Hanbury; thyreoid elixir, by the same; and thyreoid extract, made as already described.

Just as I was completing this paper an address on the thyreoid therapy, by Dr. S. J. Meltzer, before the German Medical Society of New York, March 4th, came to hand (*New York Medical Journal* of May 25th). He reviews at length the earlier literature of animal extracts, giving particular attention to the use of thyreoids in myxœdema. He concludes that in the absence of the normal secretion of the gland the patient will need continuous treatment by thyreoids, with occasional intermission, to supply the deficiency.

He considers a feeling of chilliness the earliest symptom of return of myxœdema requiring treatment, as this is noticed before weight increases. He states that the poisonous effects so often noted are due to overdoses, and that they can be absolutely avoided by giving at first only the equivalent of a grain of Parke, Davis, & Co.'s powder. The dose may be gradually increased, while carefully noting the pulse and temperature. In his cases the more serious symptoms were avoided, but he met some acceleration of pulse, fatigue, some tremor, headaches, and diffuse pains, and in some cases urticaria. Iron and strychnine relieved the weakness, salicylate of sodium and phenacetine the pains and aches. A sixteenth of a grain of pilocarpine, three times a day, relieved the urticaria.

For obesity he considers thyreoids the best remedy. By limiting the dose to three grains three times a day, he avoided unpleasant effects while reducing the patient's weight about a pound a week.

From the fact that dyspnœa and palpitation, when present, were promptly relieved, he infers that the first disappearance of fat occurs in the heart, and, further, concludes that small doses will prove to be effective in the treatment of *cor adiposum*.

I have used only the desiccated sheep's thyreoids already referred to, six grains of which represent one entire average gland, and in quite a large number of cases which I will summarize the same preparation has been employed. Armour & Co. kindly furnished me the addresses of a number of physicians who had applied to them for the remedy. I have written to these gentlemen, and have obtained a number of replies, stating the effects obtained in numerous cases which I will summarize. My own cases are only six in number, and all of them, with one exception, are still under treatment, but the results are so marked as to indicate a decided influence upon the disease by this remedy. In several of the cases it will be noted that they were first placed under the treatment which I have used for a number of years, and in two it will be observed that they had already been relieved or apparently cured from the same disease by this treatment in former years. The cases are as follows:

Case I.—L. A. W., a man, aged thirty-six years, came to me February 19, 1889, complaining of a sense of fullness in the throat, hoarseness, and difficulty of breathing, though his general health was good; weight, two hundred and twelve pounds. At that time he was suffering from laryngo-bronchitis. On February 28th it was noted that he had acute swelling of the thyreoid gland, for which he was given the iodide of potassium, in doses of from five to eight grains, after each meal, with a twenty-fourth of a grain of arsenious acid, a third of a grain of extract of nux vomica, and three grains of extract of quebracho. Four days later the left lobe was smaller and the breathing was somewhat easier. The iodide was increased to ten grains at a dose. Similar treatment was continued for the next twelve days, when he was placed upon the tincture of iodine in doses of from five to twenty drops, given in capsule after each meal. A week later the gland was injected with thirty minims of a five-per-cent. solution of carbolic acid. Six weeks later the swelling in the thyreoid had mostly disappeared. Two weeks later it is noted that the neck measured eighteen inches and five eighths, and there was no difficulty in breathing. The treatment was continued, and two weeks later, May 8th, he stated that he thought the neck was well. Ten weeks later it was noted that the swelling of the thyreoid had very nearly disappeared, and he had lost twenty-five pounds in weight. A month later no return of the enlargement of the thyreoid; weight, a hundred and eighty-five pounds.

The patient disappeared, but returned on the 10th of October, 1891, when it was stated that the neck had been swelling for the last four or five weeks; this soon disappeared under treatment similar to that used formerly.

I saw the patient in March, 1894, but there had been no return of the goitre. On May 13, 1895, the patient called upon me again, saying that for three or four weeks there had been some difficulty in breathing. The collar seemed very tight, and it was observed that there had been considerable enlargement of the thyreoid gland. The neck at this time measured seventeen inches and a quarter at the largest place. The patient weighed two hundred and six pounds.

He was given the desiccated thyreoids in doses of three grains three times daily. He returned twelve days later stating that at the end of two days the difficulty in breathing had disappeared, and since commencing the medicine the swelling had steadily decreased. His neck at this visit was of normal size, measuring sixteen inches. He departed apparently well and has not since been heard from.

Case II.—E. M., a woman, aged twenty-one, came under my care in April, 1890, because of an enlargement of the thyreoid that had lasted ten or twelve years. She had been frequently troubled with violent cough. There were neither exophthalmia nor heart symptoms, but the pulse was 108, though regular; general health and digestion were good; there were no abnormal signs over the chest; the neck measured sixteen inches.

The enlarged gland was injected with thirty minims of a five-per-cent. solution of carbolic acid, and she was given seven and a half grains of potassium iodide in water after each meal. A week later there had been no change in her condition; the injection was repeated and tincture of iodine given in doses of five to twenty-five drops after eating.

I did not see the patient again until three years later, April, 1893. She stated that she had been fairly well during the interval, but that the gland had begun to swell again recently. The gland was again injected with twenty-five minims of a five-per-cent. solution of carbolic acid, and the tincture of iodine was ordered to be taken in doses of from five to twenty-five drops after each meal. She returned in about a week and the treatment was continued. I did not see her again until February 22, 1894. She stated that from the last treatment the swelling in the gland had much diminished and that she had no trouble for a long time, until about a week previous to this call, when the gland suddenly began to enlarge and caused some difficulty in swallowing. At this visit the gland was injected with twenty-five drops of a three-per-cent. solution of carbolic acid and she was again given tincture of iodine. The treatment was continued, the injection being given about once a week for the next six weeks. During this time there was very little improvement, though the difficulty in swallowing diminished. In the early part of May I found that the uncomfortable symptoms had disappeared. The iodine had been used continuously and there had been another injection of the carbolic-acid solution. June 14, 1894, the neck measured only thirteen inches, and she appeared to be cured. I did not see her again until May 14, 1895, when the neck measured fourteen inches and a half. She was given at this time two grains of the desiccated thyreoids after each meal, and a few days later the dose was increased to three grains. A week later it was noted that the circumference of the neck had diminished a quarter of an inch. At that time the desiccated thyreoids were increased to four grains three times daily. A week later, pulse, 104; neck measured the same. Seven days later, pulse, 116; neck measured only fourteen inches. She had been taking only two grains of the desiccated thyreoids three times daily for the past week and no injections had been used. She is still under treatment.

Case III.—W. R., a lad, aged fifteen years, came to me January 9, 1895, complaining of shortness of breath and wheezing respiration upon exercise, with enlargement of the thyreoid gland, which had been present for five years.

I found that his mother apparently had consumption and a maternal great-aunt and cousin had suffered from goître. The patient's general health was good, he weighed a hundred and forty-seven pounds, and the pulse was 90. Action of the heart regular, with no abnormal physical signs. The neck measured at this time fifteen inches and a half. Patient was given five grains of iodide of potassium after each meal, and thirty minims of a three-per-cent. solution of carbolic acid were injected into the thyreoid gland. Similar treatment was continued, the injection being made weekly until the 16th of February. At that time, after five weeks' treatment, the neck still measured fifteen inches and a half, and no perceptible improvement could be noted. He was then placed upon the use of desiccated thyreoids, three grains three times daily; the carbolic-acid injections were continued once a week. A week later he had noticed a decided decrease in the size of the gland and the neck measured only fifteen inches. The dose of desiccated thyreoid at this time was increased to four grains after each meal. A week later the patient was too ill to come to the office, but it was reported that the neck had gradually decreased in size. He had suffered from faintness and much from headache all the week. A week later, March 9th, he was still feeling so poorly that the dose of the desiccated thyreoids was decreased to two grains.

He complained of having felt very weak and faint during the last few days. A week later he was free from headaches and faintness, therefore the desiccated thyreoids were increased to three grains three times daily.

The gland was still decreasing in size. One week later, March 26th, about five weeks after the treatment was begun' he reported that he had lost fourteen pounds in weight, but he was feeling pretty well excepting for frequent headache. At one of his recent visits I had noticed that he trembled a great deal during the consultation, and that he had the nervous appearance and arterial pulsations of one suffering from exophthalmic goître, but there was no prominence of the eyes. At this time the desiccated thyreoids were reduced to two grains three times daily. The next week he again reported having had headaches two or three times during the week.

The neck was found to have been reduced to fourteen inches and an eighth, and about four fifths of the enlargement of the gland had disappeared.

April 6th.—The neck still measured fourteen inches and an eighth; he had at this time gained three pounds in weight; his pulse was 140, and he was quite tremulous. Two weeks later the trembling had all disappeared, and there were no unpleasant symptoms; the treatment was continued.

May 4th.—Patient has had no headache the past week; the neck measures only thirteen inches and three fourths.

He is still taking two grains of desiccated thyreoids three times a day, and is also taking bitter tonics most of the time. He has had the gland injected with the carbolic-acid solution nearly every week.

11th.—The dose of the desiccated thyreoids was increased to four grains three times daily. On May 19th he again reported having had headaches, nevertheless the desiccated thyreoids were increased to five grains four times a day.

25th.—He had a headache nearly every day after the last prescription. The neck was found to measure fourteen inches and a quarter, half an inch increase in the last two weeks; weight, a hundred and thirty-four pounds and a half, twelve pounds and a half less than when he began treatment. The desiccated thyreoids were decreased to four grains three times daily.

June 1st.—The patient's general health is good and there is no exophthalmia or trembling. The thyreoid gland has been reduced at least four fifths.

14th.—The patient has no unpleasant symptoms and the size of the goître has been reduced fully ninety per cent. He is still under treatment.

CASE IV.—R. P., a woman, aged twenty-seven years, came to me on January 17, 1895, complaining of swelling of the right lobe of the thyreoid gland which had existed for about five years. It had caused no special inconvenience, but was slowly enlarging. There was no hereditary predisposition to the trouble; her general health was good; weight, one hundred and twenty-two pounds; pulse 95, no exophthalmia, digestion natural.

The neck over the largest part of the thyreoid gland measured fourteen inches and five eighths, and the swelling was limited to the right lobe. At this time she was given tincture of iodine internally, in doses of from five to twenty-five drops, to be taken in capsules after each meal, and the gland was injected with twenty-five minims of a three-per-cent. solution of carbolic acid.

The treatment was continued until February 12th; the solution of carbolic acid, however, had been increased in strength to four per cent. At this time there had been no diminution in the size of the gland. It was injected with thirty-five minims of a five-per-cent. solution of carbolic acid, and the tincture of iodine was continued. About a week later, on February 21st, the injection was repeated, and she was given the desiccated thyreoids in doses of from two to six grains after each meal. The iodine was also continued. At this time the neck measured fifteen inches, three eighths of an inch more than when treatment began. Six days later the neck measured only fourteen inches and three fourths. She had been taking six-grain doses of the desiccated thyreoids for the last few days. The gland was then injected with fifty minims of a five-per-cent. solution of carbolic acid, and the iodine was discontinued. A week later she said she noticed a very marked improvement; the gland was injected. The measurement of the neck had diminished to fourteen inches. One week later the digestive organs were much disturbed, she was feeling very poorly, the pulse was 120, and the temperature was 100·2°. She had been taking six grains of the desiccated thyreoids three times daily. At this time the dose was reduced to four grains. One week later she reported herself as feeling considerably better; treatment continued. A week later she complained that she had a bad headache every morning for the last week, though she had hardly ever suffered from it previously. The dose of the desiccated thyreoids was reduced to three grains after each meal. The injection of the gland was repeated. A week later the amount of the desiccated thyreoids was increased to four grains three times daily; the injection was repeated, and it was noted that she had lost three pounds in weight. At the next visit she complained of being very tired, though she suffered but little from headache.

Maltine with the hypophosphites, in doses of from one to four drachms, was given after each meal. A week later the dose of the desiccated thyreoids was increased to five grains four times a day, and the injection was repeated. A week later she reported herself as feeling well; she had lost no more weight; a week later, on May 7th, she weighed a hundred and twenty-nine pounds, or seven pounds more than when the treatment was begun. A week later, on May 14th, the neck measured only thirteen inches and a half. She had been taking five grains of the desiccated thyreoids three times daily; the dose was increased to six grains, and she was given the injection of five-per-cent. solution of carbolic acid, thirty minims as before. Subsequently the patient called once a week and treatment was continued.

June 11th.—The appetite good, the weight as before; there has been little headache and no other unpleasant symptoms; the measurement of the neck remains the same, thirteen inches and a half; but the gland seems to have diminished in size about 85 per cent. from the beginning of the treatment with the desiccated thyreoids. Still under treatment.

CASE V.—B. W. G., a man, aged twenty-six years, came under my care on March 18, 1895, complaining of palpitation of the heart and occasional dyspnœa. He exhibited marked exophthalmia and enlargement of the thyreoid gland, the latter varying with exercise. He had been affected for three years, but had never suffered from any other disease excepting rheumatism, of which he had an attack the previous fall, lasting two weeks.

His mother and two sisters have also had goître. He used neither stimulants nor tobacco, but took about three cups of coffee daily. His general health was good; weight, one hundred and fifty-two pounds; pulse, 102, very irregular; temperature normal; at times wheezing respiration and slight cough; he had been troubled somewhat with looseness of the bowels ever since the goître was first noticed. Over the upper portion of the goître the neck measured fourteen inches and three quarters, over the lower portion fifteen inches and three quarters.

Upon examination of the chest the cardiac pulsations were noticeable all over the præcordia, and cardiac dullness was found to extend three quarters of an inch to the left of the normal position. There was some want of synchronism in the action of the two sides of the heart noticeable at times, but there were no abnormal murmurs. Upon examination, the rapidity of the heart's action increased to 160 or 170 a minute. He had been taking ten-minim doses of tincture of strophanthus for some time. He was given desiccated thyreoids, two grains with each meal, also tincture of strophanthus, ten minims, fluid extract of cactus grandiflora, three minims, tincture of digitalis, seven minims and a half, in elixir of pepsin enough to make two drachms, three times a day. Coffee was interdicted. He was directed to report in a week, but he did not return until two weeks later, when he stated that he had taken cold shortly after the last visit and had been coughing ever since.

The swelling of the thyreoid gland had markedly diminished. The neck measured half an inch smaller at the upper part and five eighths of an inch smaller at the lower part. During this time he had lost eighteen pounds in weight. He complained of poor appetite and frequent vomiting after breakfast. He was given maltine with hypophosphites, the use of desiccated thyreoids was continued, and he was also given for two or three days ten-minim doses of tincture of strophanthus with a third of a grain of extract of nux vomica, two thirds of a grain of extract of hyoscyamus, one grain of camphor, and four grains of ingluvin. He was directed to return in four days, but he did not. About a week later I was informed that he had become very ill and seemed in a critical condition. I told his friends to have the medicine discontinued at once, and I think this direction was followed. I did not see him again for four weeks, when he stated that he had lost five pounds since the last weighing, but his cough had ceased and he was feeling very much better. He told me that he had been confined to the bed for two weeks after the last visit, but subsequently had much improved, the appetite returning shortly after discontinuing the desiccated thyreoid. There had been no renewed enlargement of the thyreoid gland up to this time; the pulse was slower and the exophthalmia about as at first. All told, the diminution of the thyreoid gland appeared to be about seventy-five per cent.

Case VI.—B. E. J., a woman, aged fifty years, came under my care on May 3, 1895, complaining of difficulty in breathing for the last two years, apparently from obstruction in the larynx. She complained also of cough, especially when eating. There was no pain, the appetite and general health were good, and the digestive organs were in an excellent condition.

Upon examination, I found marked thickening and hardness of the isthmus of the thyreoid gland, which measured about an inch from above downward and about three quarters of an inch in thickness. There were no abnormal signs over the lungs, heart, or aorta. Over the largest part of the growth the neck measured thirteen inches. She was given a third of a grain of extract of nux vomica and two grains of the desiccated thyreoids three times daily. She returned eleven days later reporting that she felt much better. Her cough was looser, though at times she still suffered from shortness of breath. She was given at this time half a grain of extract of nux vomica, half a grain of extract of hyoscyamus, and three grains of desiccated thyreoids. A week later she returned, reporting that she felt much improved, but that she had a weak spell a few days previously and that her appetite was not very good. The enlarged gland had considerably diminished in size, it felt much softer, and the neck at the most prominent part measured only twelve inches and a half.

June 14th.—She is still under treatment and professes to be steadily improving.

I have received personal letters from physicians in various parts of the country containing the following records:

Dr. W. O. Taylor, of Princeton, Ontario, reports twenty-five cases of goître treated by internal administration of the thyreoid gland in the last twenty weeks. The patients were all females, and in age ranged from fourteen to sixty-one years. The duration of the disease in seven cases extended from six to fifteen years, the rest running from three months to three years. These cases were treated from seven to twenty weeks each, with an average of from five to ten grains of the desiccated thyreoids three times a day for three weeks. All except seven cases were improved.

The greatest reduction in the size of the neck noted was two inches and three quarters. In six cases it was reduced two inches or over, in ten cases an inch and a quarter or less.

As to the weight, three patients lost an average of fifteen pounds, while a few others lost from one to four pounds. Headache was noted in thirty per cent. of the cases, dizziness in thirty-seven per cent., trembling in twenty-five per cent., while rapid pulse was noted in five cases and weakness in five cases, the weakness being so great in one case as to render the discontinuance of treatment necessary.

Dr. Taylor attributes the prevalence of goître in his locality to the very hard water, and states that in the use of thyreoids he obtained little effect unless the patients drank distilled water. He has had the very large number of two hundred and seventeen cases of goître in eight years.

In addition to the twenty-five cases of goître reported he has also treated with the thyreoids three cases of myxœdema in one family—a brother, sister, and a cousin. These cases were under treatment from three to seven months with doses of from five to ten grains three times a day, the disease having existed from four to seven years and a half. One patient was improved for seven weeks, then became worse. In the second the symptoms were kept stationary. In the third case he found treatment very satisfactory; the mental condition was decidedly improved, and the general swelling of the body largely disappeared.

Dr. J. Williamson, of Ottumwa, Ia., reports two cases of goître treated for twenty-one days, first with five grains, later with two grains and a half, without effect on the goître and with the usual headache, etc. The weight diminished perceptibly.

Dr. F. A. Packard, Kearney, Neb., reports one case of goître treated with ten-grain doses three times a day, but it caused so much trembling, dizziness, and nausea that he gave it no further trial.

Dr. S. W. Connell, of Milwaukee, reports one case in which the circumference of the neck was reduced an inch and three quarters by two months' treatment with five-grain doses. This patient had suffered with chronic headaches for years, so that the influence of the thyreoid on that symptom is uncertain.

Dr. H. M. S. Byron, of Whiteside, Tenn., reports one case of rapid reduction of the goître of twelve years' standing, and some loss of weight, without headache or dizziness, but with some trembling, rapid pulse, and weakness, under sixteen weeks' treatment with two-grain-and-a-half doses.

Dr. Thomas H. Briggs, of Battle Creek, Mich., treated four cases of goître with the desiccated thyreoids for six to eight weeks with excellent results, beginning with five-grain doses given at least two hours from meal time, three times a day, for the first week; he later reduced the dose to two or three grains. The goîtres were all much reduced in size, and the weight was usually slightly reduced without headache or other disagreeable symptoms, except nausea and dizziness. He found that the disgust for the remedy could be overcome by giving solution of strychnine with it. He had also used the remedy in a case of lymphadenoma, one of carcinoma, and one of tubercular glands of the neck, but without material results.

Dr. Steele Bailey, of Stanford, Ky., treated one case each of goître and of myxœdema, giving five-grain doses three times a day for three months. Treatment then had to be discontinued in both cases on account of the usual ill effects from such large doses, though the goître decreased in size, while the total weight of body increased five pounds. The myxœdema grew worse in spite of thyreoid, belladonna, and other medicaments.

Dr. J. K. P. Rogers, of South Portland, Me., treated a case of myxœdema of nine years' standing in a woman fifty-seven years old. Two months' treatment removed all evidence of the disease, beginning with three grains, given on alternate days, reduced a grain and a half after the first week, and later five grains twice a week. The weight was reduced fifteen pounds in the first month and three pounds in the second. By the use of such small doses at longer intervals the unpleasant effects were entirely avoided; but the case is remarkable for a symptom I have not elsewhere heard described. The patient was seized with intermittent pains, the exact duplicate of those of the third stage of labor both in appearance and in severity. These persisted for four days after treatment had been discontinued, and required morphine hypodermically to control them. Later the dose was diminished on account of sciatic pains and stiffness, which prevented the patient from standing erect, and lastly on account of epigastric pain and palpitation.

Dr. George W. Hall, of Chicago, reports a case in which I recommended the desiccated thyreoids, in which the goitre, which had existed for six years, was completely cured by four weeks' treatment by doses of two to three grains. The patient during the treatment had suffered much from headache, with slight dizziness, but no other unpleasant symptoms.

Dr. C. H. Ott, of Chapman Quarries, Pa., treated a case for ten days with thyreoids, with improvement.

Dr. C. A. S. Prosser, of Boise City, Idaho, treated one case for five days with a sample only, without appreciable change.

Dr. A. C. Webber, of Cambridge, Mass., treated one case for four weeks with five-grain doses, with almost complete disappearance of the goitre and without headaches or other symptoms but rapid pulse.

Dr. P. F. Metz, of New Haven, Conn., treated two cases with improvement, with two grains two or three times a day.

Dr. Stanley P. Warren, of Portland, Me., gave a few five-grain doses, when the patient became frightened at the terrific face and head congestion and stopped treatment. However, within two weeks the tumor decreased half an inch.

Dr. F. L. Shaw, of Machias, Me., reports one case treated for a month by five-grain doses, the swelling being reduced half an inch, and no disagreeable symptoms except headache.

Dr. C. Walliser, of Sonoma, Cal., reports one case of goître treated by three two-grain tablets daily for a week without effect, except all the disagreeable symptoms; for this reason treatment was discontinued. He also reports a case of myxœdema treated for two weeks, the result being unknown so far.

Dr. C. S. Bolton, of Richmond, Ky., treated a consumptive patient with goître, with improvement.

Dr. R. B. McKeage, of Shickshinny, Pa., treated one case of myxœdema of thirteen months' standing with five-grain doses for twenty days. Patient improved enough to return to work.

Dr. R. A. Lancaster, of Gainesville, Fla., gave the remedy for a short time, but the patient was nauseated and quit treatment.

Dr. Henry G. Ohls, of Chicago, noting the general loss of weight in the treatment of goître by the thyreoids, gave two patients with obesity the remedy in doses of two to four grains three times a day. One used the remedy ten days and gained five pounds, but stopped the treatment on account of severe backache and stiffness of limbs, but without headache or other symptoms. The other lost five pounds in two weeks' treatment, but discontinued it at that time on account of daily rather severe headache. The last patient has recently begun with smaller doses, but I can not yet report results.

Dr. G. L. Williamson, of Homer, Ill., reports one case of twenty-five years' duration, treated for three weeks with six-grain doses, reduced an inch and a half. In this case there was some puffiness of the face, which disappeared under treatment, and the patient, a minister, thought that his mind was more acute.

Dr. B. F. Van Valkenberg, of Long Prairie, Minn., had a fatal case of exophthalmic goître, which he treated for two weeks with the thyreoid, with negative results.

Summary.—With my six cases treated by internal administration of the desiccated sheep's thyreoids, and those reported to me by personal letter, I have, all told, fifty cases of goître, not including one case of advanced exophthalmia, in which the patient died one month after treatment began. In these I find the following results: The swelling was reduced in thirty-eight cases; swelling not affected in eleven cases; no report in one case.

Of the cases where no improvement was noted the remedy was used only five days in one and a week in another. In four cases the goître had existed from six to twenty-five years and perhaps was largely cystic, though not specified.

I have reports of seven cases of myxœdema, with the following results: Improved, five; not affected, one; unknown, one.

Of these, in one case the patient improved for seven weeks and then deteriorated, though treatment was continued for three months. Two cases of obesity without other disease are reported. One of the patients lost five pounds; one gained five pounds.

The symptoms noticed after the administration of this remedy, observed in the various cases reported by me and reported by personal letter, have been: Headache in eighteen; no unusual symptoms in eight; no report, twenty-four; dizziness in twenty; no unusual symptoms in five; no report in twenty-five; trembling in fourteen; no unusual symptoms in five; no report in twenty-one; rapid pulse in eleven; no unusual symptoms in six; no report in thirty-three; weakness in seventeen; no unusual symptoms in ten; no report in twenty-three; backache in one; nausea in seven; no report in forty-three; lost weight in twenty-five; gained weight in two; mind improved in two; nervousness in one; uterine contractions in one.

Conclusions.—From a consideration of the history of this subject and an analysis of the cases which we have presented, the following conclusions seem to us justifiable:

1. Thyreoid products produce marked physiological effects upon the nervous and circulatory systems, as indicated by headache, dizziness, pains in other portions of the body, and great weakness, and by flushing of the face and rapidity of the heart's action.

2. Some of these unpleasant symptoms usually occur when a daily dose is reached corresponding to one and a half or two entire thyreoid glands of the sheep.

3. If the administration of the remedy in doses that cause such symptoms is continued for a few days, constitutional effects are produced indicating that persistent use of doses of from six to twelve grains of the dried thyreoid (equivalent to one or two thyreoid glands) three times daily might produce fatal results.

4. Desiccated thyreoid glands appear quite as active as the liquid extracts and more stable.

5. Internal administration appears quite as effective as hypodermic medication.

6. For internal use, the adult dose of the desiccated thyreoids should not exceed two grains three times daily at first, but the dose may be gradually increased to two or three times this quantity, provided it does not cause unpleasant symptoms. There is no evidence that moderate doses have an injurious effect.

7. The remedy in some cases has a pronounced effect on the body weight, but this is very uncertain and varies so greatly in different persons, and in the same individual at different times, that there is strong reason for suspecting that the loss of weight which sometimes follows this administration may be due entirely to disturbance of the digestive organs.

8. In the treatment of myxœdema the remedy has undoubted value and appears to benefit quite a large percentage. In these cases it is probable that the best results will be obtained by giving it at intervals for a long time.

9. In exophthalmic goître the remedy causes rapid reduction in the size of the gland, but it has no perceptible effect upon the exophthalmia, and it apparently aggravates the heart symptoms. In this disease it must be used guardedly and its effects must be carefully watched.

10. In many cases of goître internal administration of full doses of the products of the thyreoid is followed by a most remarkable diminution in the size of the diseased gland. Improvement or cure may confidently be expected in seventy-six per cent. of the cases, but sufficient time has not yet elapsed to determine what the final results will be. It is probable that cystic growths in the thyreoid gland would not be influenced by this remedy.

11. Clinical experience has not yet demonstrated that this remedy is of value in other diseases, but its effect in diminishing the size even of very firm and hard enlargement of the thyreoid gland would certainly justify experimentation in other directions.

34 Washington Street, *June 14th.*

THE HYPODERMIC USE OF AMMONIA IN CAPILLARY BRONCHITIS OR BRONCHO-PNEUMONIA.*

By H. MORELL, M. D., C. M.,
SLAYTON, MINN.

With your permission I will impose on your time for a few moments to ask your attention to the hypodermic use of ammonia, which I have used in some diseases, but more especially and frequently in capillary bronchitis or broncho-pneumonia. We are well aware that in almost every case of this disease we meet with we have to deal with one of the most fatal of all diseases affecting children under five years of age. It is not within the scope of this short article to give the signs and symptoms of this disorder, but I will draw your attention to a few of the most important symptoms, so that we may draw conclusions better from the treatment of the disease under consideration.

The onset of a broncho-pneumonia may either be preceded by an ordinary bronchitis or it may arise during convalescence from one of the exanthemata or in whooping-cough. The temperature rises with rapid pulse, and with it the most characteristic symptom, which is great acceleration of the breathing; this may rise as high as sixty or eighty in a minute. The expiratory sound is generally accompanied by a grunt, with the mouth open and the angles of it drawn downward and outward, indicative of suffering; the eyes are glassy, staring, or anxiously rolling about. Dyspnœa is marked, and cyanosis rapidly develops; the face becomes livid, the lips and nails blue, as a result of non-aeration of the blood, and if the condition is not relieved death occurs from apnœa.

From these symptoms it will easily be seen that energetic treatment will be required to counteract the above-named conditions, especially as they arise from deficient aeration of the blood. In conjunction with poultices, attention to the bowels, and general treatment, we have in ammonia a drug which is recommended by modern writers, which will stimulate the respiratory centre, increase the power of expectoration, and quicken the action of the heart. Dr. J. L. Porteous, speaking of the treatment of pneumonia, says: " As regards ammonia in the disease, we consider that in this drug we have a valuable, quick, and powerful diffusible stimulant. It produces an increase in the force of the pulse, and is a heart stimulant. I have seen wonderfully quick results from it when the patient showed a tendency to faint, or in dyspnœa."

In broncho-pneumonia we must remember that there is a tendency toward collapse, and therefore stimulating treatment is required from the outset of the disease. All authorities agree that ammonia is one of the most useful drugs we possess, but I believe it is one of the most difficult drugs to get a child to take, even in the form of any combination. I have been using, hypodermically, the aromatic spirits, not because I think it is the best form to inject, but as it was the only preparation I had at hand.

I generally inject from fifteen minims to two drachms into the arm, according to the age of the child, and I must say that it acts quicker and better than if given by the mouth, and does away with all coaxing.

Of course, there is no doubt that it causes a smarting and burning sensation for a minute or so, but in the cases where I have used it the child does not seem to mind it very much. The action of the drug is noticed almost immediately; the face loses its livid color, becoming flushed, the pulse beats stronger, and respiration is deeper—in fact, all the symptoms are improved. The frequency of the injections vary; when the symptoms of collapse appear, I inject every hour or so, until the child breathes easier and the heart gets stronger, being careful, of course, not to overstimulate my patient. The aromatic spirits may not be the best form to use, but I have had good success with it. The aqua ammoniæ would seem to be more suitable.

In conclusion, allow me to say that in my opinion the hypodermic method acts more promptly and favorably, even when the patient can take remedies in the usual way, not only in this but in other diseases.

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* Read before the Minnesota State Medical Society, June, 1895.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, SEPTEMBER 7, 1895.

THE REGULATION OF PROSTITUTION.

PHYSICIANS look at prostitution from a point of view supplementary to that of the moralist. They, more than any other class of citizens, realize the physical detriment that results to the community, or to a portion of it, from unrestricted prostitution. As a general thing they recognize the impossibility of suppressing it, as indeed does everybody who knows its history, save only those who are blinded by a fanatical spirit. The so-called "social evil" presents so many points of difficulty in its management that it is well-nigh useless to expect any material benefit to result from legislation on the subject unless the legislation is based on broad conceptions of justice and expediency, and it never will be so based until such conceptions are entertained by a large class of the people. To bring about such a desirable state of public opinion it is quite necessary that the moralist and the physician should not array themselves against each other, each intent on carrying through all that he regards as important; they should rather co-operate to secure the best attainable regulation of the miserable trade. Nothing, it seems to us, could more powerfully conduce to such co-operation than that energetic and philanthropic women should give their attention to the matter. This, we are happy to say, they are beginning to do. For some months past a Boston lady—her name we do not now remember—has labored earnestly to turn public opinion in that city in favor of a humane and health-protecting course in the treatment of prostitutes, and in this issue of the *Journal* we reprint from one of the Chicago newspapers a circular letter that has been issued by a lady physician of Chicago, Dr. Luella Day Underhill, urging the same arguments substantially as the Boston lady is putting forth, and proposing in addition a State institution for rearing children born to parents whose own course of life or their surroundings render them unfit to be the custodians of the young. Dr. Underhill is chairman of the police committee of the Illinois Woman's Alliance, and it is in that capacity that she issues her appeal, so it is to be hoped that it will receive general attention and careful consideration.

Too much must not be expected of the subjection of prostitutes to medical examination, for where it has been enforced it has proved disappointing to those who looked upon it as capable of stamping out venereal disease; but it certainly does some good and therefore ought not to be neglected. Of course it can not affect clandestine prostitution—the worst form of the evil—but neither can anything else. So far as it can be made to go, its influence will be to diminish the spread of venereal disease, and we hope that these ladies efforts to bring about its adoption will prove successful.

MINOR PARAGRAPHS.

INTRA-UTERINE DILATATION OF THE VAGINA.

THE heading of an article running through several recent numbers of the *Wiener medizinische Blätter*, *Ueber intrauterine Colpeuryse*, by Dr. Richard von Braun-Fernwald, is a striking example of the misuse of words in medical literature, almost as bad as the expression "double castration." It can really mean nothing but intra-uterine dilatation of the vagina, which is of course absurd.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 3, 1895:

DISEASES.	Week ending Aug. 27.		Week ending Sept. 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	34	9	21	3
Scarlet fever	33	5	17	3
Cerebro-spinal meningitis	3	3	3	2
Measles	99	11	80	5
Diphtheria	119	33	126	21
Small-pox	0	0	0	0
Tuberculosis	153	127	—	—

The Regulation of Prostitution in Illinois.—The following circular letter, issued by Dr. Luella Day Underhill, appeared in the *Chicago Chronicle* for August 22d:

"To the Parents and Taxpayers of the State of Illinois: No doubt you have read of the work that the Woman's Alliance has been doing in the police courts in the past month. Feeling that you are interested in the elevation of humanity as well as in the welfare of the hundreds of little children who are brought into the world unwelcomed, we ask you to give us your idea of the best plan to stop the blackmailing of the fallen women that is going on in the police courts of this city, and the best manner of caring for homeless children. Among those already suggested, and the one we think the most rational, is to license all disorderly houses, compelling each inmate to register, and placing them under medical inspection. Establish a hospital where all inmates can be treated, requiring each case to be reported to the board of health the same as small-pox cases, and in so doing prevent diseased, crippled, and blind children from being brought into the world. Build a State home in the country on the cottage plan, with land enough to make it self-supporting, where every child, and others whose parents can not support or govern them, shall be apprenticed till they have reached the age of majority, to be educated, taught trades, and money earned over their expense of keeping placed to their credit. They would be known as children of the State. This would avoid bringing them up in the workshops and stores or on the streets in the great city, where the very air they breathe is contaminated with filth and their associations crime and immorality. Often they are thrown into the county jail with hardened criminals for trivial offenses, depriving them of everything that has a tendency to develop their better natures, and then we expect them to be anything but thieves. I am satisfied that if one half the money that is spent in the courts prosecuting these women and children was spent in caring for them from their infancy, as they should be cared for, we would have fewer such houses, fewer asylums and other charitable institutions to support. Yes, and we would have fewer millionaires enriched by child labor. Reformatories would be a curse of the past—soon forgotten. This is a question that we think every Christian man and woman should consider intelligently, and we beg of you to do so and write to us your opinion of the proper course to pursue in this matter for the good of humanity at large."

The Indian Territory Medical Association.—The semi-annual meeting will be held in Eufaula on December 3d and 4th under the presidency of Dr. J. S. Fulton, of Atoka. The preliminary programme includes the following papers: Pneumonia, by Dr. G. W. West, of Eufaula (to be discussed by Dr. S. N. Allen, of Webber Falls); Typhoid Fever, by Dr. J. G. Rucker, of Claremore (to be discussed by Dr. R. L. Fite, of Tahlequah); The Selection of Climate for Phthisis Pulmonalis, by Dr. B. F. Fortner, of Vinita (to be discussed by Dr. A. M. Clinkscales, of Vinita); Indigestion, by Dr. O. Bagby, of Vinita (to be discussed by Dr. J. D. Brazeel, of Wagoner); Diphtheria, by Dr. G. R. Rucker, of Eufaula (to be discussed by Dr. L. D. Crawford, of Pryor Creek); The Strumous Diathesis, by Dr. C. P. Linn, of Claremore (to be discussed by Dr. P. Donaho, of Afton); Influenza, by Dr. R. I. Bond, of Hartshorne (to be discussed by Dr. F. L. A. Hamilton, of Wagoner); Insanity, by Dr. J. T. Wilson, of Sherman, Texas (to be discussed by Dr. B. Hackett, of Fort Smith, Arkansas); The Treatment of Ununited Fractures, by Dr. H. B. Smith, of McAlester (to be discussed by Dr. L. C. Tennent, of McAlester); Stricture of the Urethra, by Dr. I. P. Gumley, of Sherman, Texas (to be discussed by Dr. W. H. Harrison, of Webber Falls); Pelvic Surgery, by Dr. E. N. Wright, of Atoka (to be discussed by Dr. W. B. Miller, of Tahlihina); Orchitis, by Dr. W. B. Pigg, of South McAlester (to be discussed by Dr. D. H. Burke, of Webber Falls); Abscess of the Liver, by Dr. J. M. Boling, of Claremore (to be discussed by Dr. W. H. Bailey, of Eufaula); Cystitis, by Dr. LeRoy Long, of Atoka (to be discussed by Dr. M. P. Haynes, of Eufaula); Scalds and Burns, by Dr. E. N. Allen, of South McAlester (to be discussed by Dr. C. A. Pennington, of Tahlequah); Fractures in or near the Joints, by Dr. R. H. M. Dawbarn, of New York (to be discussed by Dr. W. C. Hall, of Coffeyville, Kansas; Suppurative Otitis Media (Chronic), by Dr. H. Moulton, of Fort Smith, Arkansas (to be discussed by Dr. B. F. Fortner, of Vinita); The Early Diagnosis and Treatment of Iritis, by Dr. T. M. Taylor, of Sherman, Texas (to be discussed by Dr. E. Pleas, of Oolagah); Malignant Tumors of the Eye, by Dr. B. Tiffany, of Kansas City (to be discussed by Dr. J. M. Ball, of St. Louis); Puerperal Eclampsia, by Dr. J. S. Fulton, of Atoka (to be discussed by Dr. R. A. Burr, of Pryor Creek); Metritis, by Dr. J. L. Blakemore, of Muskogee (to be discussed by Dr. R. T. Harrod, of Checotah); Uterine Displacements, by Dr. F. B. Fite, of Muskogee (to be discussed by Dr. J. C. Bushyhead, of Claremore); and Placenta Prævia, by Dr. G. A. McBride, of Fort Gibson (to be discussed by Dr. E. Y. Bass, of Talala).

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 25 to August 31, 1895:*

Billings, John S., Lieutenant Colonel and Deputy Surgeon General, is granted leave of absence from August 21 to September 30, 1895.

Cabell, Julian M., Captain and Assistant Surgeon, will be relieved from duty at Washington Barracks, District of Columbia, upon the expiration of his present sick leave, and ordered to report to the Surgeon General.

Flagg, Charles E. B., First Lieutenant and Assistant Surgeon, will be relieved from duty at Angel Island, Cal., upon his return from duty in the field, and ordered to Fort Hancock, Texas, to relieve Winter, Francis A., First Lieutenant and Assistant Surgeon. First Lieutenant Winter, on being thus relieved, is ordered to Fort Grant, Arizona, for duty, relieving Wells, George M., First Lieutenant and Assistant Surgeon. Lieutenant Wells, on being thus relieved, is ordered to Fort Mason, California, for duty, relieving Kneedler, William L., Captain and Assistant Surgeon. Captain Kneedler, on being thus relieved, is ordered to San Diego Barracks, California, for duty.

McCaw, Walter D., Captain and Assistant Surgeon, is relieved from duty at the Presidio of San Francisco, Cal., and ordered to Fort Ringgold, Texas, for duty, relieving McCulloch, Champe C., Jr., First Lieutenant and Assistant Surgeon. Lieutenant McCulloch, on being thus relieved, will report in person to the commanding officer, Army and Navy General Hospital, Hot Springs, Arkansas, for duty at the hospital.

Meriwether, Frank T., First Lieutenant, will be relieved from duty at San Diego Barracks, California, upon the expiration of his present sick leave.

Quinton, William W., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Riley, Kansas, and ordered to Fort Logan, Colorado, for temporary duty at that post, relieving La Garde, Louis A., Captain and Assistant Surgeon. Captain La Garde, on being thus relieved, will proceed to Boston, Mass., and report for duty as attending surgeon and examiner of recruits.

Wells, George M., First Lieutenant and Assistant Surgeon, is granted leave of absence for two months, to take effect on his relief from duty at Fort Grant, Arizona.

Society Meetings for the Coming Week:

Monday, *September 9th:* Idaho State Medical Society (first day—Boise City); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); New York Academy of Medicine (Section in General Surgery); German Medical Society of the City of New York; Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

Tuesday, *September 10th:* Idaho State Medical Society (second day); New York Medical Union (private); New York Academy of Medicine (Section in Genito-urinary Surgery); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Rensselaer and Ulster (quarterly), N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Ky.

Wednesday, *September 11th:* Idaho State Medical Society (third day); New York Pathological Society; American Microscopical Society of the City of New York; Medical Societies of the Counties of Albany and Montgomery (quarterly), N. Y.; Philadelphia County Medical Society; Worcester, Mass., District Medical Society (Worcester).

Thursday, *September 12th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Societies of the Counties of Cayuga and Cortlandt (quarterly), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *September 13th:* Yorkville Medical Association, New York (private); Medical Society of the Town of Saugerties, N. Y.; German Medical Society of Brooklyn; Cleveland, O., Medical Society.

Births, Marriages, and Deaths.

Died.

Rand.—In Sugar Hill, N. H., on Friday, August 30th, Dr. Henry W. Rand, of Brooklyn, aged forty-four years.

Proceedings of Societies.

OREGON STATE MEDICAL SOCIETY.

Twenty-second Annual Meeting, held in Portland on Tuesday and Wednesday, June 11 and 12, 1895.

The President, Dr. J. A. Fulton, of Astoria, in the Chair.

(*Continued from page 220.*)

Can Diseases of Women be Cured?—Dr. C. C. Strong, of Portland, after reviewing the numerous diseases peculiar to women and the various methods devised for their relief, asked what percentage of cures could be reported. He said it was not his wish to condemn originators of operations, but rather to express his respect for recognized methods that had stood the test of experience. There was no doubt, however, that the improper use of operations where other methods might have done as well was greatly to be condemned. It had seemed to him that there was still a necessity of urging more conservatism in certain quarters. Where a theory was advanced it should be received with caution and studied carefully, and if it was deemed useful, we should be sure we understood to what cases it was to be applied and just how to use it. All surgical procedures involved a degree of risk. Careful consideration must be given to the question of whether or not the symptoms complained of were severe enough to justify these risks. It was not a sufficient justification that the patient or her friends gave their consent. We must not allow ourselves to operate because the patient wanted an operation. There was no doubt that the art of diagnosis should be carefully studied, and no one would deny that there was an opportunity for improvement. If the abdomen was opened to prove that there was nothing abnormal within it or that the condition present was incurable when both these facts were susceptible of being ascertained without opening the abdomen, we were prostituting the calling of medicine. If a proper selection of cases was made and wise methods were applied conservatively, we should get better results from our efforts to relieve humanity. It was not within the scope of the paper to throw new light upon any of the subjects mentioned, but rather to suggest the possibility that many methods were employed which did more harm than good, and to make a plea for greater conservatism.

Dr. William Jones said that it had seemed to him that when a procedure was in the experimental stage it often did more harm than good, because it was adopted as a fad; when it had found its proper place it was often useful.

Dr. A. C. Smith considered that it was his privilege to resist the innuendoes of non-operators. He did not think that reliable surgeons ever attacked parts that ought not to be attacked. He thought it was vicious conservatism to talk to a woman who had a laceration, for example, tell her to wear certain kinds of clothes and diet, and let her go on in her miserable existence without anything rational being done for her cure. He could not stand and hear attacks upon the well-established operations without raising his voice in their defense.

Dr. Linklater, of Hillsboro, thought that more might be done for women if it were not for a certain class of physicians who had not the courage to undertake anything but conservative prescriptions.

Dr. Tucker thought it a bad thing to discourage advancement in any line. He had admiration for the man who had a fad, for it did good in the long run.

Dr. Fulton said that if there was any one branch in medicine in which good was done it was gynæcology. He took exception to Dr. Strong's use of *female;* that might mean any species; *woman* was the best term to use.

Dr. Strong was surprised at the misapprehension of his sentiments. He did not want to be understood as throwing any disfavor on recognized operations, but had only entered a plea for more conservatism.

The Dangers of Intra-uterine Instrumentation.—Dr. William Jones, of Portland, said that until the advent of the present gynæcological era the cavity of the uterus had been considered as a space not to be entered with the instruments of the physician or surgeon except under the most urgent necessity, but now all this had been changed and physicians rushed to the other extreme. The author referred to the various instruments that had been devised for this purpose and also to the several other methods of procedure in the intra-uterine treatment of diseases of women. An operation at present fashionable was curettage; no doubt it had its field of usefulness, but its dangers were great. Whenever the physician introduced an instrument within the womb he exposed the patient to dangers on account of it. It was certain that the simple introduction of a sound within the uterus might set up a violent inflammation in that organ or in the tubes, the ovaries, or the pelvic tissues, with all its attendant evils. The danger of exciting pelvic inflammation was greatly increased where intra-uterine applications were made. These applications being usually strong, added their caustic effects to the injury done by the instrument with which they were applied, and the risk was greatly increased. As curetting was a more potent procedure for good than applications to the endometrium, so were its attendant dangers greater. It created extensive raw surfaces within the womb and correspondingly increased opportunities for absorption of septic material, if there was any present. The danger from intra-uterine instrumentation was much greater if the patient had suffered from one or more attacks of pelvic inflammation. Particularly was this the case if the inflammation had left behind adhesions, indurations of the pelvic tissues, or chronic disease of the tubes or endometrium. The author illustrated the risks involved in the topical treatment of the endometrium by citing several cases from which he drew the following inferences: 1. That inserting an instrument into the uterine cavity was attended by a good deal of danger to the patient from its proneness to excite pelvic inflammation. 2. That this danger should not be incurred for trivial reasons, but only when the advantages to be gained were considerable and reasonably certain. 3. That when it was decided to introduce an instrument into the uterus it should be done with all the precautions employed in a formal operation, and strict asepsis should be observed and rest in bed afterward. It was obvious from these conclusions that where intra-uterine treatment was necessary patients should never be treated as office patients.

Dr. Smith did not believe that the introduction of a sound into the uterus need be followed by disastrous results if the instrument was aseptic. Where bad results had followed there must have been traumatism. Where the uterus was fixed by adhesions and these were broken up and purulent collections ruptured, there would no doubt be an igniting of inflammation. Diseased endometrial tissue could be removed with the curette without any untoward result. It was only where fixation or tubal trouble was present that precautions need be used.

The Principles Involved in the Study and Treatment of Disease.—Dr. George F. Koehler, of Portland, said that, notwithstanding the unkind remarks of men to the contrary, the philanthropic phase of the healing art had always been its pride and its honor, but without vivisection, against which so much was said, the physiologist of to-day would not stand where he did. Did persons who entertained objections to these methods ever stop to consider what good to mankind was thereby wrought which could not otherwise be gained? The science of physiology was thereby advanced, and our knowledge of the laws of life had in the main been won by experiments on living animals. By this increase of knowledge disease had been made less prevalent. The recognition of abnormal life actions, of derangement of function, and of the rationale of cause and cure constituted the science of medicine. Investigations in medicine looking to the prevention of disease had been more successful than those looking to means of cure, and had opened up a field of research closely connected with the dearest interests of humanity. Our knowledge of the value of protective inoculations in the treatment of infectious diseases had about revolutionized their position in medicine. The prevention and treatment of microbic diseases with the elements called antitoxines was fast becoming a science. The chief feature in acquired immunity was the presence in the blood of elements which could neutralize the toxic products of bacteria. Antiseptics and disinfectants had done much toward destroying germs and preventing the spread of infectious diseases. Perfect cleanliness gave perfect asepsis. The principles involved in the treatment of diseased conditions rested on the four great pillars on which the science of medicine had been reared, anatomy, physiology, pathology, and materia medica and therapeutics. In closing his remarks, the speaker said that the value and importance of careful study and close observation, noting the result of our experience and comparing it with that of others, could not be overestimated. As the microscopic cell, by its multiplication and enlargement, formed the several parts of the human body, and these by their harmony formed the structure man, so did the atoms of knowledge which we gathered here and there by observation and experience, and stored up in the recesses of the brain, unite to form that living body of science which was the source of all our art.

(To be continued.)

Book Notices.

The Art of Massage: its Physiological Effects and Therapeutic Applications. By J. H. Kellogg, M.D., Member of the British Gynæcological Society, Superintendent of the Battle Creek (Mich.) Sanitarium. Battle Creek, Mich.: Modern Medicine Publishing Co., 1895. Pp. xvi–9 to 282.

This volume is intended primarily for the use of students of massage, and in many respects is admirably suited to their requirements. It opens with a brief historical chapter, which is followed by chapters upon the anatomy concerned and upon the physiological effects of massage. These are sufficient for the purpose, but the assertion that "the physician always pinches the skin before introducing the hypodermic needle," which is made to illustrate the anæsthetic effect of pinching, is incorrect, while the statement that "under the influence of massage the blood-vessels become more active, pumping forward the blood into the veins," is a twofold mistake, because blood-vessels and arteries are not synonymous and because "blood-vessels" do not "pump." Following the chapter upon physiological effects comes one upon the therapeutical applications of massage which is so extreme in its brevity and condensation that it will certainly not satisfy the physician, however it may strike "student nurses"; moreover, some of the pretensions to remedial superiority made for massage strike us as immoderate. As to the value of massage in muscular rheumatism we have nothing but entire belief to express, but are certainly taken by surprise to have it said of this disease that muscular atrophy "is one of its most constant results," at least to the clinical degree. Next comes a chapter upon the procedures of massage which occupies the major part of the book. This chapter is excellent, and, though the art of massage is not to be learned from the pages of a book without other and more practical instruction, yet as supplementary to the practical instruction such matter as this chapter contains is highly valuable. The matter is concise, clear, well presented, and well arranged, and of vast importance are the very excellent and numerous half-tone illustrations which accompany it. This chapter will indeed be of service to the "student nurse." Chapters on joint movements and on massage of special regions follow and are also excellent. Interesting, too, is the chapter on mechanical massage, though scarcely so important as the three which precede it.

It had been well were this the end, but the author has seen fit to make of his work a sort of muscular scrap book by the insertion at this point of a number of chapters which, though interesting enough in their way, and even valuable had they occurred elsewhere, serve only to detract from what up to this point had been a work on massage and a work of considerable merit. Of these chapters are one on scientific physical training, one on individual and comparative muscular strength in men and women, and unfortunately one on the "rest cure." In this last we are early told that "Mitchell was not the first, however, to present the subject in a methodical form." Now we all know that, and, moreover, Mitchell knows it, too, because he has often been told so. Furthermore, he has himself made the same remark. Mitchell was not the first to treat disease by the systematic employment of rest any more than he was the first to discover rest, but he did originate the treatment of feebleness "by a combination of entire rest and of excessive feeding, made possible by passive exercise obtained through the steady use of massage and electricity" (Mitchell), and now he must often feel sorry that he did. As for the chapter on the "rest cure," it is mainly a brief consideration of the therapeutic usefulness of the horizontal posture. There are several more short chapters, one giving rules relating to massage, one on the correct use of terms, and one on the general physiology, names, nerve supply, and actions of the muscles of the human body, also an appendix containing notes of cases treated by massage.

A rather unusual feature of the book is the use of marginal numbers placed against the subjects throughout the book by which easy reference is had from one part of the volume to another. These the author thinks will be useful in ordering massage, the doctor specifying the number of the procedure he wishes employed, and the operator being guided thereby.

We have already called attention to the excellence of the half-tone illustrations, but in singular contrast to them is the quality of others of the cuts, especially that of the skeleton and that of the muscles. These two are simply impossible. Taken altogether the work is uneven, not only in text but also as a specimen of book-making.

Formulaire des spécialités pharmaceutiques. Composition, indications thérapeutiques, mode d'emploi et doses. A l'usage des médecins. Par le Docteur M. GAUTIER, ancien interne des hôpitaux, et M. F. RENAULT, lauréat de l'École de pharmacie, etc. Paris: J. B. Baillière et fils, 1895. Pp. 5 to 297.

TRANSLATED and briefly expressed, the preface of this little book states that pharmaceutical specialties are much prescribed by the physician because they are easy to order, certain in composition, and not open to the difficulties and errors of ordinary dispensing. It refers to the enormous number of these preparations and the impossibility that the physician should preserve for reference their literature, which he is constantly receiving and never reading. It is therefore desirable, it says, to unite in practical and scientific form information about all these preparations, for the guidance of the physician. The formulary is divided into three parts. In the first part these proprietary medicines are grouped under the headings of their principal ingredients, and in the case of each are given its composition, therapeutical indications, method of administration, and doses. Moreover, only those preparations are admitted and considered whose worth seems proved. In the second part (mémorial thérapeutique) we find listed various diseases, and in each case are named the preparations suitable for its treatment, reference being given in the case of each remedy to its more detailed consideration in the first chapter. In the third part is given as complete a list as possible of these proprietary medicines, with the accompanying names of their makers, and finally a list of these makers themselves together with their addresses. When it is also understood that this little book is arranged alphabetically throughout, and that the matter is well ordered, well selected, and most condensed, it will be seen how useful a thing it must be almost of necessity. Of course, this particular volume is comparatively of lesser importance to us than to the French physicians, though many of these French preparations are in use in this country, and the book, too, deals with some remedies other than French, but the plan is so excellent and the need so evident that its American similar becomes most desirable. Theoretically, physicians should perhaps not prescribe proprietary remedies, but practically they do, and if they must do so it is certainly desirable that they should know what they are using; moreover, it is not always as a prescriber that the physician is forced to make the acquaintance of these medicines, and in several ways it might be most important for him to have the means of knowing what they contained; hence the value of our little formulary and its kind.

Diagnostic et traitement des tumeurs de l'abdomen et du bassin. Par J. PÉAN, membre de l'Académie de médecine, etc. Tome troisième. Avec 228 figures intercalées dans le texte. Paris: G. Masson, 1895. Pp. viii–1093. [Prix, 15 *fr.*]

THAT a treatise upon gynæcology embodying the experience of a single man should have required three huge volumes, with a fourth, equally large, in prospect, before completion, confirms the prophecy which we made some time ago that the near future would see this subject treated of in monographs and encyclopædias, and by those who were specialists in the various subdivisions. Nothing can remind one more forcibly than this volume that "art is long." There is no name in France which has been more prominently identified with surgical gynæcology than Péan. It passes comprehension how one man has been able not only to write or superintend the preparation of these volumes, and do the vast amount of clinical work which they describe, but in addition publish many other volumes on special and general surgery.

Surely Péan's has been a busy life. A large portion of this volume is devoted to the author's clinical records in connection with tumors of the uterus, the Falloppian tubes, the ovaries, the broad and round ligaments, and the peritonæum. It could not fail to be interesting, covering as it does so much of the time that is included in the history of the surgery of such growths. But it is not less full in its discussion of the pathology of the subject, and in spite of the author's predilection for France and French authors we believe he has, in general, treated each subject in a broad and catholic spirit, giving credit where it seemed due.

His name will be most intimately associated with the method of removing tumors, especially myomatous tumors, of the uterus by way of the vagina. The usefulness of this operation in many cases is unquestioned. That it will ever be a universal substitute for the abdominal method we do not believe; the technical difficulties which it involves are too great, the risks assumed too many, to tempt some at least of those who are well grounded in the other way. It may lead to a wise discrimination in employing it in many cases of tumors quite readily reached from below, and to its more frequent use in emergency cases in which the element of shock must be eliminated as much as possible and in which the simple vaginal incision with drainage will accomplish all that can be expected at the urgent moment.

The Chronic Disorders of the Digestive Tube. By W. W. VAN VALZAH, A. M., M. D., formerly Demonstrator of Clinical Medicine, Jefferson Medical College. New York: J. H. Vail & Co., pp. iv–151.

OUR readers are probably familiar with this work of Dr. Van Valzah's, for previous to its appearance in book form the greater part of it had been printed in the shape of journal articles, partly in the *New York Medical Journal* and partly in certain of our contemporaries. Owing to this fact extended criticism of the book seems unnecessary. Nevertheless, while noting the assembling of these papers and their publication in book form, it will not be amiss if we briefly express our opinion thereon. The little book is in many ways an exceptional one, very well written and very readable. Its style is almost conversational and its arrangement devoid of that classification, dividing, and subdividing which, though often desirable, are much overdone. Of course, treatment is the basis of the work and the therapeutic suggestions are exceedingly valuable. Certain of the author's views are, of course, opposed to those of some other authors; for instance, his recommendation of small doses of hydrochloric acid in gastric subacidity, while the larger number of writers now advocate large ones, but differences of opinion are not necessarily valid grounds for objection.

The consideration of the nature and preventive treatment of seasickness is admirable; though certainly not conclusive, because no theorizing on this subject apparently can be conclusive, it is none the less logical. A feature of this chapter is a chronological presentation of the various theories which have been put forth to explain seasickness. Frankly, however, none of them seem so satisfying as the author's.

The chapter upon habitual constipation was not among the journal articles of which we have spoken. It is in every way equal to its companions. Dr. Van Valzah's book is of the sort that one sits down and reads with enjoyment and benefit; it is not a book of reference in the usual acceptation of the term, it is not full of strange and novel things, it preaches no system or "cure," but it is a valuable book and, if we may so describe it, one which is in a high degree companionable and full of "horse sense."

Exercise and Food for Pulmonary Invalids. By Charles Denison, A. M., M. D., Professor of Diseases of the Chest and of Climatology, University of Denver, etc. Denver: The Chain & Hardy Company, 1895. Pp. 5 to 71. [Price, 35 cents.]

This little book is composed of two papers which the author read at medical meetings, the one on Exercise for Pulmonary Invalids, the other on Food for Chronic Pulmonary Invalids. Now both of these are excellent in their way, but the way is somewhat rambling and suited rather to the purpose for which they were originally intended than to publication in book form. The author, in his first paper, places a high value upon systematic exercise for the chronically consumptive, and lays down most excellent rules for their guidance, but everybody knows how much the preservation of general vigor has to do with the result in pulmonary tuberculosis and how necessary systematic exercise is to vigor. Of the part on pulmonary exercise the matter is more original, especially that portion of it which deals with apparatus devised by the author.

The chapter on food is largely a treatise on meat pulp and hot water, which the author holds most desirable for the consumptive because of their value in dyspepsia and because of the frequent occurrence of indigestion in tuberculosis. That the Salisbury treatment may benefit some forms of dyspepsia we gladly grant, that dyspepsia is often present in the consumptive is also well known, but that the relation of dyspepsia to tuberculosis is causative or sufficiently constant to make this diet so generally and exclusively important as the author would have us believe remains to be proved.

Puerperal Eclampsia. By Kedarnath Das, M. B., Medical and Surgical Registrar to the Medical College Hospital, formerly Resident Goodeve Scholar, Eden Hospital, Calcutta. Pp. 61.

This is the record of the author's experience with a deadly complication. He saw and treated twenty cases in the course of about three years, and determined by comparative studies that the disease was much commoner in India than in Europe or America. He believes that, if not entirely due to renal disorders, it is greatly dependent upon such trouble. The mortality at the Eden Hospital has averaged 58·4 per cent. for the past fifty years, but in recent years, the conditions at the hospital being much improved, the mortality has diminished, and will no doubt approximate that of other well-regulated hospitals. The author thinks, however, that Indian women are unusually susceptible to eclampsia, and are without good resisting powers to its baneful influences. An appendix gives an interesting series of accounts of autopsies upon those who died from eclampsia.

Transactions of the Southern Surgical and Gynæcological Association. Volume VII. Seventh Session, Charleston, S. C., November 13, 14, and 15, 1894.

The combination of surgery and gynæcology has certainly worked well in this organization, which puts forth its interesting *Transactions* year after year, demonstrating the progress and activity in these lines of work in the Southern States.

The criticism that a sectional organization is apt to be narrow in its aims and scope is forestalled by the fact that representative men from all sections of the country are to be found at the meetings of this society and participate largely in its work.

Transactions of the American Association of Obstetricians and Gynæcologists. Vol. VII. For the Year 1894.

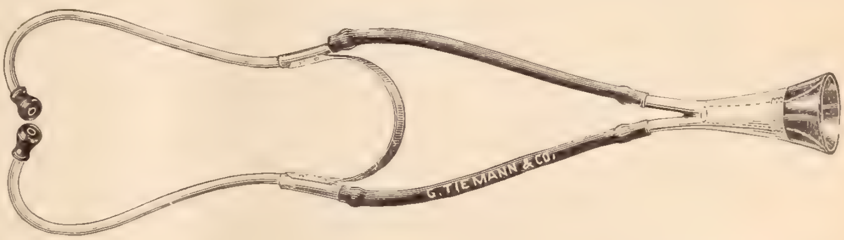
This always welcome volume shows the up-to-standard work which has characterized its predecessors. The vigorous growth and excellent work which this society is showing year after year are not only, of necessity, very gratifying to those who have stood by it and developed it with such earnestness, but are also a fine record of much of the best that has been done in American gynæcology during these recent years.

New Inventions, etc.

AN IMPROVED STETHOSCOPE.

By Sidney Yankauer, M. D.

The stethoscope which is perhaps the most popular at the present time, known as the Albion stethoscope, consists of two metal limbs with hard-rubber ear tips, a metal chest piece likewise tipped with hard rubber, and two flexible rubber tubes connecting the parts. The column of sound passes through the conical cavity of the chest piece to a narrow neck, where it is divided by a sharp spur into two columns which enter the bifurcations of the chest piece, to be transmitted along the limbs of the stethoscope to the ears.



In the Albion stethoscope, as ordinarily manufactured, the sound is collected from the area included by the rim of the chest piece, which has a diameter of one inch and an eighth, contracted into a narrow column of three thirty-seconds of an inch, the diameter of the neck, and then divided into two columns, each of which has a diameter of six thirty-seconds of an inch. The bore of the neck, then, is one eighth as large as the combined bores of the two limbs. While concentration of the sound is necessary, its contraction into a narrow neck and subsequent expansion is unnecessary and injurious, for the greater the concentration the greater the number of reflections from the wall of the conical cavity, and the greater the interference of the sound waves.

Accordingly, Messrs. Tiemann & Co. have made for me a chest piece in which the neck is enlarged, so that its area is equal to the sum of the areas of the two limbs. Here the column of sound, after undergoing a certain concentration, is divided by the spur and transmitted to the ear without any further change in volume. With this improvement the chest sounds are not only heard louder, but they are more clear and distinct, and preserve more of their true quality—*i. e.*, their quality as heard directly with the ear without the intervention of a stethoscope.

207 East Fifty-seventh Street.

Miscellany.

Infectious Sore Throat.—The *Lancet* for August 17th publishes an article by Mr. J. C. Thresh, of Chelmsford, on the importance of obtaining early information in regard to outbreaks of infectious disease. The author issued a circular letter drawing attention to the fact that sore throat, especially if associated with headache or sickness, was one of the earliest symptoms of certain infectious diseases, and the result of this procedure, he says, was that many epidemics in which the most constantly marked symptom was sore throat were brought under his notice which could be referred neither to diphtheria nor to scarlet fever. In February, 1893, the author examined several children and found that they were suffering from headache, a little feverishness, and sore throat. Examination of the tonsils showed them to be enlarged, pale, and somewhat flabby. They were not abnormally red, but the mucous membrane around the apertures of the follicles was distinctly infiltrated, slightly thickened, grayish, and opaque. Exactly the same condition, he says, had at that time led at least two physicians to report such cases as diphtheria. Two patients in the particular outbreak referred to suffered more severely, both bleeding freely from the nose. One had a temperature of 104° F. for two days, probably due to amygdalitis, which was followed by suppuration. The disease was evidently infectious, two and three children in one house being attacked. A few adults also suffered, and both the severe cases mentioned were of adults. The author concluded that this was a form of influenza, since a few typical cases of that disease were met with, and usually in houses in which others were suffering from sore throat. In various other parishes about this time he met with similar cases, some of which were diagnosticated as diphtheria. Beyond the circular patches of infiltrated mucous membrane around the apertures of the crypts of the tonsils there was nothing to indicate diphtheria. At a later date the author examined such a throat bacteriologically, but obtained no diphtheria bacilli. In May a similar epidemic occurred in another parish many miles distant, but a large proportion of the patients suffered from epistaxis, and there were no typical cases of influenza in the same houses. In none of the above cases was any rash observed. In October of the same year he was asked to visit another parish in which the school attendance was suffering from absence of children on account of sore throats. He found that most of the children affected had been out in the fields picking acorns in the damp grass. The children appeared at first to have taken cold, then the throat became very sore, and the submaxillary glands at one or both sides became enlarged. The tonsils resembled those just described, but in one case the mucous membrane of the pharynx was affected, and Mr. Thresh seriously suspected diphtheria for a time. Herpes on the lips was met with in several instances. This little outbreak seemed to him to be due to catching cold, and that the prevalence was due not to any infective quality, but merely to the fact that a considerable number of children had been occupied out of school hours in gathering acorns during a wet season.

In December, 1893, an outbreak of what was said to be diphtheria occurred. Two or three cases were reported as diphtheria, and one child died of croup, but the medical attendant did not feel justified in reporting it as diphtheritic. From the resemblance of the cases to those previously described as due to influenza the author regarded these as the same, and he had no reason, he says, afterward to alter his opinion. There were two schools in the parish, but the outbreak was limited to the children attending one of these. Toward the end of last year his attention was again especially directed to a series of similar outbreaks. On December 12th he found in one parish that forty-six children (twenty-nine families) had been or were away from school on account of sore throat. In a typical case the child complained of feeling cold, sat over the fire, and shivered. The face was flushed and had an expression of weariness; the throat was a little sore, and there was a little headache, and sometimes pain in the limbs and generally weakness. The submaxillary glands were enlarged in a few cases, but not markedly so. The tonsils and pharynx were slightly congested. There was no infiltration. The patients usually got well again in from three to seven days. Mr. Thresh found one or two cases fairly typical of influenza, and one case in which the pains in the limbs had been so severe that the parents called in a medical man, thinking that the lad was suffering from rheumatic fever. In another large village about the same time many children were absent from school on account of some undefined illness. The parish was an extensive one, and for some time sporadic cases of scarlet fever and of diphtheria had been reported. The cases reported as scarlet fever were undoubtedly correctly diagnosticated, but there is a doubt, says the author, about the diphtheria cases. Cultures were made in three out of four reported cases, but no Löffler's bacilli were found, and in a piece of membrane from one throat which the Local Government Board asked Dr. Klein to examine, he failed to find these bacilli. The author examined a number of throats and obtained a very varied assortment of organisms, but nothing to indicate diphtheria. The children were sick for a few days only, and a fair proportion had enlarged glands under the jaw. The swelling was so marked that many cases were regarded as mumps, but in the author's patients there was no affection of the parotid gland.

The last series of cases of sore throat which came under his observation was associated with an outbreak of mumps. In several families, while some members had all the typical symptoms, others had headache, nausea, or actual vomiting, pains in the limbs, and sore throat, but no enlargement of the parotids. In his recent experience with diphtheria, he says, there have been thirty cases, all of which have terminated favorably. In one family four were attacked, and for a time one case threatened to prove fatal. No diphtheria bacilli could be found in the membrane. Bacteriological examinations were made and only in one instance were any organisms resembling Löffler's found. The author is inclined to think that the bacilli, from their mode of growth, were of the pseudo-variety described by Klein. Other cases of diphtheria were reported, in which no diphtheria bacilli were found. The following case, says the author, is a typical one: Beyond a little malaise and sore throat the patient did not feel sick, nor did he show premonitory symptoms of diphtheria. No bacilli were found in the culture made. One or more points in the mucous membrane of the tonsils, soft palate, or uvula became infiltrated, appearing paler than the surrounding mucous membrane. The patch became paler and paler until it was nearly white. It was but slightly if at all raised, and had no sharply defined margin. Before becoming white the infiltrating material was absorbed and the part resumed its normal appearance; but when it assumed the milky-white color it finally peeled off, leaving a shallow ulcer which speedily healed. This may or may not, says the author, be associated with a mild form of amygdalitis. The constitutional disturbance is, as a rule, very slight, but occasionally there are marked premonitory symptoms—such as headache, nausea, languor, and slight fever, but these rapidly pass away, and the patient feels fairly well.

If these are not cases of true diphtheria, says Mr. Thresh—and he is inclined to think they are not—it is time we adopted some other name for the disease, as at present our notification returns are rendered useless by their inclusion with diphtheria. It is probably a disease having distinct specific characters, and as it is undoubtedly infectious it is almost certainly due to some micro-organism. How should the medical officer of health regard such cases? he asks. Strictly speaking, he has no business to diagnosticate them, but to accept all notifications sent in and act upon them in the usual manner. Many cases occur, however, in which no medical man is called in, and which the medical officer of health may, with the permission of the patient and relatives, examine and diagnosticate. Any error in diagnosis may be of serious import. If regarded as not being diphtheria, and subsequent events prove that it is true diphtheria, an epidemic may be the result. Where there is the slightest doubt, therefore, the only safe plan is to regard them as cases of diphtheria, and insist upon all precautions being taken to prevent the disease spreading. These precautions will very rarely include the compulsory closing of an elementary school, the brief duration of the disease and its apparently trivial character not rendering such a course necessary. Besides this epidemic form of pseudo-diphtheria there are probably several other throat affections which simulate true diphtheria. Nearly two years ago a medical health officer sent the author a large piece of transparent membrane from a child's throat, together with a note saying that it was the most marked case of diphtheria he had ever seen. The membrane appeared to consist entirely of spherical cells, apparently a form of torula, and upon streaking some agar jelly the growth consisted entirely of such cells, which, on account of pressure, when viewed under the microscope, appeared hexaedral, octoedral, or polyhedral. Soon after, a sporadic case occurred in the author's district, in which the same organism occurred, associated with bacteria, and a few months later the same patient was again reported as suffering from diphtheria, and again the torula was the most prominent feature of the growth obtained from the throat.

One thing is becoming clear, he says, that under the name of diphtheria we are including two, if not several, distinct diseases, due to the development of different organisms on or in the mucous membrane of the throat. Among the countless multitude of micro-organisms which occur in nature it would indeed be wonderful if one only were capable of developing upon Nature's medium and in Nature's incubator and of injuriously affecting its host. During sleep the back of the mouth forms the incubator *par excellence*, and many different organisms flourish there, more than one of which are probably capable of penetrating the mucous membrane and causing its infiltration and exfoliation, and the products of their metabolism, toxines, etc., becoming absorbed may be the cause of constitutional disturbances such as those described in connection with the epidemics of sore throat.

Membranous Colitis.—The *Revue internationale de médecine et de chirurgie pratiques* for July 25th publishes an article on this subject by M. L. Touvenaint. This affection, he says, is characterized by the rejection, with the discharge, of a matter principally constituted of mucus, either under the form of a transparent substance or of a false membrane of a ribbonlike or tubular appearance. This disease has received many names—such as, glutinous diarrhœa, membranous enteritis, tubular diarrhœa, intestinal croup, interstitial enteritis, etc.—which proves to what extent writers have differed as to the pathological symptoms, and the reason is that the majority of authors have overlooked the anatomical facts which enable us to explain this disease.

This affection, says the author, is more frequently observed in women, especially in those who present genital lesions. With regard to its rational pathology, according to Letcheff, there are two forms, the mechanical and the infectious. The former is caused by constipation especially, and the latter is due to the spread of infection from the genital organs to the rectum. In the majority of cases the infectious cause predominates and is frequently the only one. Constipation, however, must be taken into consideration, as it may be caused by uterine deviation or by tumors of the true pelvis. It may also be connected with another cause altogether independent of that of the pelvic organs, but capable of giving rise to muco-membranous colitis. This cause has been pointed out by M. Germain Sée, who says that it is connected with the muscular atony of the intestine and the relaxation, so frequent in multiparæ, of the abdominal muscles; this, with the loss of tonicity of the intestinal coat, explains the powerful action of the double mechanism in the production of an obstinate constipation which soon causes a muco-membranous formation.

With regard to the infectious form, says M. Touvenaint, Poirier's work and those of Morau have shown how numerous are the lymphatic anastomoses which unite the different parts of the genital organs, and the relations which exist between the lymphatics of these organs and those of the rectum explain the direct spread of the genital infection to the rectum. Thus, the pathogenic agent, which may exist in a latent state for a certain length of time, may at any moment encroach upon the lymphatic plexus of the true pelvis and the rectal coats. Muco-membranous colitis, he says, may, then, be considered as infectious, whether directly by the spread of the infection from the genital organs to the intestine, or indirectly by putrid absorption caused by a mechanical trouble of genital origin.

Muco-membranous colitis, says the author, rarely appears at the beginning of acute uterine trouble; oftener it exists in patients who have suffered with abdominal symptoms for many years and show symptoms of uterine affection. Whatever it may be, when it does exist, the affection is distinctly characterized by a uniformity of symptoms. Some are revealed by the examination of the fæcal matter, and others by the painful sensation felt by the patients and by the troubles which supervene in the general condition. Constipation is the rule in this disease, and the discharges are hard and dry and are accompanied by abnormal elements constituted of mucus or of muco-membranous masses which are more or less thick and abundant, and sometimes by blood. This mucous matter is presented under three forms: The simple, which looks like the white of an egg; true concretions of mucus having the appearance of small pieces of thin white skin; and the muco-membranes of a varied appearance, which are sometimes like a whitish fibre or a true whitish membrane forming ribbonlike pieces of various length and thickness. Their color is often grayish. More frequently the three varieties are found together.

Among the symptoms of muco-membranous colitis abdominal pains occupy the first rank. The colics, which often precede the evacuations by some hours, are frequently localized in the left side of the abdomen and follow the course of the descending colon and of the sigmoid flexure. The pain may become generalized, or may be most decided near the transverse colon or, at other times, near the cæcum. It generally ceases after the evacuations, but the abdomen remains very sensitive. Besides these spontaneous pains, there are, in muco-membranous colitis, colics that are caused by abdominal palpation. This pain is situated in different portions of the large intestine, and particularly the region of the sigmoid flexure. In such cases the pain is at its height in the entire left iliac fossa. Constipation, the peculiar discharges, and spontaneous and provoked pains are the principal symptoms of muco-membranous colitis.

In regard to the general symptoms, says the author, two cases may present themselves: In some patients a muco-membranous diarrhœa, whether preceded or not by colic, occurs in the absence of general symptoms. The affection remains local, and is manifested exclusively by a peculiar discharge. In this form the muco-membranous discharge alternates with the simple diarrhœa. In spite of the intestinal troubles, the general condition remains satisfactory and the patient is able to continue her work. In other cases the muco-membranous colitis is accompanied with a serious general condition. There are fever, depression, and sometimes a typhoid condition. The digestive disorders are marked; the appetite is gone, and, if the patient attempts to eat, nausea and vomiting follow. Again, in other cases, the remote effects on the general condition are not so marked. In regard to the nervous system, insomnia, headache, and all the symptomatic complications of neurasthenia may be noted. Potain observed arrhythmia and palpitation of the heart. The persistence of the pains, of the insomnia, of the nervous troubles, and of those of nutrition end in causing a peculiar cachexia, in the production of which the uterine affection often plays an important part, especially when the lesion is due to a microbian infection or to suppuration.

The muco-membranous colitis, says M. Touvenaint, which is observed in uterine troubles is frequently of long duration. Its evolution depends on a lesion of the uterus or of its appendages, and consequently follows its progress.

The prognosis is not generally grave, especially when the attacks are not very intense, or when they occur at short intervals. However, the disease constitutes a serious complication, for it contributes greatly to produce cachexia and it is very rebellious to treatment. In the diagnosis of this affection, says the author, this special form of enteritis may be confounded with various affections—such as chronic dysentery, tuberculous enteritis, cancer of the large intestine, etc.

With regard to its treatment, local treatment of the genital and intestinal lesions must be instituted as well as a general treatment for restoring the patient's strength. When the attacks occur the patient must remain in bed; also, if there is fever or symptoms of self-intoxication. For quieting the abdominal pains friction with a soothing liniment or with warm camphorated oil to which laudanum has been added may be used. These frictions must be made in the direction of the large intestine. If the pain is extremely acute, small doses of opiates may be given in potions or in enemata. M. Germain Sée recommended Indian hemp in doses of from a grain and a half to four grains and a half every day. Belladonna suppositories may also be useful. Intestinal antiseptics given by the rectum may be employed. Letcheff recommended the use of copious irrigations with hot solutions of nitrate of silver in the proportion of one in two thousand or even one in one thousand. According to this author, says M. Touvenaint, these irrigations act on the intestine in three different ways: By the quantity of liquid used, which cleanses the mucous membrane; by the temperature, which increases the secretions of the glands and expels the microbes lodged there; and by the antiseptic, which, even in feeble doses, possesses an energetic power in destroying microbes.

In the great majority of cases, says the author, when the colitis of women with uterine disease is not accompanied with complications these irrigations nearly always suffice. But, when it has reached the chronic stage, particularly after the uterine affection is cured, we must resort to general and local treatment, and especially to symptomatic medication. In the typhoid form calomel is useful. In the serious chronic forms milk, soup, eggs, raw meat, and rich bouillon are given. To strengthen the patient, cinchona, kola, and alcoholic frictions are recommended.

It must not be forgotten, says M. Touvenaint, that in cases of long standing the disease is very tenacious, and recovery takes place very slowly, and that a careful hygiene and regularity in the diet and in the treatment are very essential.

The Therapeutic Value of Direct Galvanization in Nervous Gastralgia and in Habitual Constipation.—The *Archives d'électricité médicale expérimentale et clinique* for July 15th contains an abstract of an article by M. W. Brock, which was published in the *Semaine médicale.* M. Brock, says the writer, has observed twenty-four cases of nervous gastralgia and thirteen cases of habitual constipation, in which direct galvanization of the stomach and of the rectum were employed. For applying the galvanic current to the stomach an electrode connected with the negative pole was introduced into the stomach; the positive pole was applied to the lumbar region of the vertebral column. The intensity of the current was from fifteen to twenty milliampères. The applications lasted five minutes and were repeated three times a week. Out of the twenty-four patients two were completely cured, six were improved, and the rest showed no favorable results. Direct galvanization in nervous affections of the stomach, says the writer, evidently rarely gives satisfactory results. However, as many cases of gastric neurosis are rebellious to all ordinary therapeutic measures, M. Brock thinks that direct galvanization of the stomach may, in certain cases, constitute a valuable resource.

Direct galvanization of the rectum has been practised by the author by means of an intrarectal negative electrode, the introduction of which was followed by the injection into the intestine of two hundred cubic centimetres of a six-per-cent. solution of sodium chloride. The positive electrode, in the form of a large plate, was applied on the epigastrium. The current had an intensity of from fifteen to twenty milliampères. These applications lasted also five minutes and were administered three times a week. The results of the treatment in these cases were very much better than those obtained with direct galvanization of the stomach. Out of the thirteen patients, six were definitively cured of constipation, three were more or less improved, and four only received no benefit from the treatment.

A Non-diphtheritic Case of Angina followed by Death after the Injection of Serum.—The *Journal de clinique et de thérapeutique infantiles* for August 1st publishes an article by

M. Roux in regard to a case of non-diphtheritic angina which had recently come under M. Moizard's and M. Bouchard's observation. In this case M. Moizard used an injection of ten cubic centimetres of serum, which was followed eight days afterward by death. No autopsy was performed, and this fact, together with the conclusions drawn by M. Moizard, was made the subject of the article by M. Roux, who says that an autopsy should have been demanded, and that the observation is incomplete from a clinical and from a bacteriological point of view. Is it not a surprising fact, he asks, that this child should have died from the effects of an injection of ten cubic centimetres of the serum, when for a year more than a hundred thousand doses of serum have been employed in France, the patients receiving from forty to sixty cubic centimetres and even more, and when among the children thus treated the mortality has been lowered to an unheard-of figure?

Would it not have been proper, asks M. Roux, to find out if the symptoms of poisoning in this case had not been caused by some other agent than the serum? Should we not at least stop and consider for a moment before declaring that the serum is a very toxic substance? Serum, he says, has been injected in thousands of healthy children as a preventive without giving rise to bad effects. M. Roux cites a number of authors to show that there have been cases of angina accompanied by generalized polymorphous erythema with fever, albuminuria, diarrhœa, and convulsions, followed by death before the discovery of serum therapy. In these cases it had been a question of infection from streptococci; the results of the examinations left no doubt on the subject. Why, he asks, may it not have been the same in the case under discussion? Is it not reasonable to suppose that the child died from an infection following streptococcous angina, rather than to affirm that death was due to the serum? Should not this supposition have been taken into consideration? All the symptoms attributed to the serum are found in the various streptococcous infections, even the anuria that is regarded by M. Moizard and others as the most serious symptom of serum poisoning.

M. Moizard's communication, continues M. Roux, is an incomplete document; it can not, in any way, justify the very grave accusation with which it concludes. However, he says, he would not have drawn attention to it if it had not been made the subject of a report to the board of health, which, by a vote, rendered M. Moizard's hypothetical conclusions official. This, he says, he could not allow to pass without a protest. M. Proust, who was charged with the investigation in this case, contented himself with transcribing the history of the case and accepting M. Moizard's conclusions. He did not appear to be struck with the insufficiency of the diagnosis or with the improbability that ten cubic centimetres of serum would kill a child when thousands of others had borne the injections of much larger doses without danger. Not for one moment, says M. Roux, did it occur to him to search the literature on the subject for similar cases before the employment of serum. He contented himself with saying that poisoning with serum was, fortunately, very rare; that the serum used at the present time was more active than that used when serum therapy was new, and that perhaps it would be better hereafter to employ doses of five cubic centimetres. All these statements had been adopted without discussion by the board of health, and M. Proust had been thanked for his important communication. On the following day the medical journals had stated that the council recognized the fact that the serum was dangerous, and that it should not be injected until the physician was perfectly sure that the disease in question was diphtheria. After this, says M. Roux, it is not to be wondered at if physicians do not know what course to pursue in regard to the injection of the serum in the presence of a grave angina.

M. Moizard's and M. Bouchard's conclusions, he says, can not be sustained from a practical point of view, and are of doubtful importance. If their advice is followed, the serum will be injected when it is too late. It is for this reason, says M. Roux, that he can not remain silent, and he earnestly requests physicians not to listen to M. Moizard. The serum may cause transitory symptoms, but it is not dangerous, it does not cause death.

In the same journal there is an article entitled A Medical Quarrel, in which the writer, alluding to the quarrel which has broken out between the faculty and the Pasteur Institute, remarks that in the beginning the wrong was evidently on the side of the faculty, for the conclusions formulated by M. Moizard and M. Proust were wanting in exactness, and, no autopsy having been made, it would have been better, he says, to wait for more convincing proofs before formally incriminating the new method.

On the other hand, says the writer, M. Roux failed in the courteous and quiet demeanor which is the proper attitude for the men of the laboratory to assume in responding to the criticisms and objections which are made in regard to their experiments. M. Roux's argument is harsh and disdainful, and would lead us to believe that he had been personally attacked.

The New York State Examination.—We are indebted to Dr. M. J. Lewi, the secretary of the board representing the Medical Society of the State of New York, for the following statistics of the State board's examinations for the academic year from September, 1894, to June, 1895, both months included:

	Total number examined, 677.	Successful, 507.	Rejected, 170.	Percentage of rejections, 25·1.
By the State Society's board . .	606	445	161	26·5
By the Homœopathic board. . .	60	52	8	13·3
By the Eclectic board.	11	10	1	9·1

Itching of the Mouth.—In the *Deutsche Medizinal-Zeitung* for August 15th there is an abstract of an article entitled Pruritus Oris, by Tommasoli, published in the *Giornale italiano delle malattie e della pelle*, 1894, No. 3. The author relates the case of a peasant woman, thirty-three years old, without anything remarkable in her history, who for four years had suffered with an itching and biting sensation in the cavity of the mouth, which compelled her to bite her tongue and to compress the mucous membrane of the cheeks between her teeth. The affection was aggravated in paroxysms, and occasionally she was entirely free from it. The chief situation of the abnormal sensation was in the tongue, which often bled from severe bites. Examination of the cavity of the mouth showed on the mucous membrane of the cheeks two whitish, almost horizontal and symmetrical stripes, which were nearly as long as the alveolar processes, to which they corresponded roughly in their course and of which a slight impression was to be seen. Beginning at the last molars, these stripes reached almost to the angles of the mouth. The epithelium on these stripes was moist and soft, but not apparently destroyed. The whole looked like a linear zone of œdematous, swollen mucous membrane. Yet, on palpation, the stripes felt like cords, indolent and not yielding in the slightest to digital compression. All the rest of the mucous membrane, as well as the tongue, appeared sound. The author believes that this was a chronic paroxysmal paræsthesia of the buccal mucous membrane, giving rise to actual changes in those parts of the mucous membrane that were most affected. He finds analogues of this case in the paræsthesiæ of the anus and of the vulva which are commonly called pruritus, so he gives that name to the affection described by him.

The Medico-legal Society, of New York, held a congress on September 4th, 5th, and 6th, at which the following papers were to be read: What Constitutes Unsoundness of Mind? by Dr. W. B. Fletcher, of Indianapolis; The Mental Symptoms of Premature Sexual Decay, by Dr. Frank P. Norbury, of Jacksonville, Ill.; Latent Hysteria as a Cause of Temporary Mental Disease, by Dr. James R. Cocke, of Boston; Paranoia, by Dr. C. H. Hughes, of St. Louis; Simulation of Insanity—a Medico-legal Study, by Dr. William F. Drewry, of Petersburgh, Va.; Legal Responsibility in Idiotic and Feeble-minded Persons, by Dr. G. E. Shuttleworth, of Richmond, England; The Necessity of Amendments of the Law of New York appertaining to Commitments of the Insane, by Mr. Albert Bach, of New York; Mechanical Restraint in the Care of the Insane, by Clark Bell, Esq., of New York; What shall we do with the Alcoholic Inebriate, apparently Insane? by Dr. Norman Kerr, of London; Questions of Responsibility in Alcoholic Coma in Persons Found on the Street, by Dr. Lewis D. Mason, of Brooklyn; Alcoholic Anæsthesia as a Factor in Crime, by Dr. Isaac N. Quimby, of Jersey City; Inebriety and the Opium Habit in their Relation to Testamentary Capacity, by Dr. E. C. Mann, of New York; Legal Responsibility in Inebriety, by Dr. T. D. Crothers, of Hartford; Suicide Considered as a Mental Epidemic, by Dr. Forbes Winslow, of London; Suicide and the Right to Commit it—Prostitution: the Evil, the Cure, the Legislation, etc., by Gustave Boehm, Esq., of New York; Criminality a Disease—Its Ætiology and Treatment, by Dr. Daniel R. Brower, of Chicago; Sexual Inversion, with an Analysis of Thirty-six New Cases, by Dr. Havelock Ellis, of London; The Megalomania of H. P. Blavatsky—a Study of Criminal Alienism, by Professor Coues, of Washington, D. C.; The Medico-legal Aspect of Child Insurance, by F. L. Hoffman, of Newark, N. J.; Sexual Perversion and Crime, by Dr. William Lee Howard, of Baltimore; Sociology and Criminology, Growths of Modern Civilization—the Case of Czynski, by Moritz Ellinger, Esq., of New York; The Evolution of Theosophic Medicine and its Present Standing in the United States, by Dr. P. C. Remondino, of San Diego, Cal.; Hypnotism and Crime, by Professor W. X. Sudduth, of Chicago; Hypnotism in the Courts of Law, by Clark Bell, Esq., of New York; Telepathy, by Professor Edwin Checkley, of New York; Psychophysiological Mechanism, by Sophia McClelland, of Westchester, N. Y.; The Duties of the Railway Surgeon to the Corporation, to the People, and to Himself, by Professor A. M. Phelps, of New York; The Mental States of Railway Employees—Tuberculosis in Legal Medicine, by Dr. W. B. Outten, of St. Louis; Shock in Railway Surgery, by Dr. H. W. Mitchell, of New York; Is the Railway Hospital an Economy? by Dr. George Chaffee, of New York; The Relation of Occult Medicine to Law, by Dr. Mary Weeks Burnett, of Chicago; The Necessity of Medical Supervision for Criminal Arrests, by Austin Abbott, LL. D., of New York; When should Gonorrhœal Patients be Allowed to Marry? by Dr. Ferdinand C. Valentine, of New York; Gunshot Wounds, by Dr. J. N. Hall, of Denver; The Physician's Relation to his Client, and his Obligations as a Citizen of the State, by Dr. J. C. MacGuire, of New York; Woman in the Light of Law and of Medicine, by Eliza Archard Connor, of New York; Woman in the Legal Profession, and its Relation to Medical Jurisprudence, by Dr. Jennie Stanton Wilcox, of Saratoga Springs, N. Y.; The Legal Evolution of Woman, by Kate E. Hogan, LL. B., of New York; Where are We? by the Hon. C. H. Blackburn, of Cincinnati; Creditable Witnesses and Substantial Evidence, by Sophia McClelland, of Westchester, N. Y.; Some Anomalies of Justice in the District of Columbia, by Dr. Irving C. Rosse, of Washington, D. C.; The Relation between Chemical Constitution and Physiological Action, by Professor Peter Townsend Austin, of New York; Somatic Death by Poison, by Professor H. A. Mott, of New York; Two Remarkable Cases of Chronic Antimonial Poisoning, by Professor Charles A. Doremus, of New York; and What may be the Part of Bacteriology in Forensic Medicine? by Dr. Paul Gibier, of New York.

Phosphorus Poisoning.—The *Revue internationale de médecine et de chirurgie pratiques* for August 10th contains an abstract of an article on this subject by M. Magitot, which was published in the *Revue d'hygiène* for March, 1895. This affection, says the author, is the result of a slow and progressive absorption of white phosphorus. It is observed in the workmen in factories for the manufacture of matches. The vapors diffused in the atmosphere under the form of gaseous oxides and also of phosphorus in a crude state, penetrate the organism through different tracts, especially the respiratory tract. The quantity absorbed varies according to the nature of the occupation, also according to the arrangement of the factories and the conditions of ventilation.

The rapidity with which these vapors penetrate the organism is very great, and in a few months they give rise to symptoms which persist for a long time. This condition leaves an impress of decay on the organism, and cyanotic disturbance. It gives rise to bronchial troubles, to suffocation, and to coryza. It alters the osseous system, and fractures are more frequent among this class of workmen than among others. It also modifies the urinary secretion. In regard to treatment, Dr. Magitot advises the use of oil of turpentine, antiseptics, and alkaline solutions. He also expresses the wish that the authorities would take legal measures to suppress this affection by forbidding the use of white phosphorus in the manufacture of matches.

Poisoning due to Excessive Wine Drinking.—The *Mercredi médical* for August 14th publishes a report of a recent meeting of the *Académie de médecine* at which M. Babès read a paper on this subject. In Paris, he said, wine had been the cause of various symptoms which could not but increase when the duty was removed on hygienic drinks, among which wine was classed.

There was a widespread opinion that wine was strengthening, and workmen often drank as much as three pints a day. Considerable hypertrophy of the liver was commonly observed, and cirrhosis was but a termination of a long-standing affection. M. Babès stated that for more than twenty years he had not found cirrhosis among those who drank alcoholic drinks only, but only among those who drank wine. Cirrhosis, he said, was rather common in countries where the peasants drank only the products of their vineyards, but it was much commoner in Paris, where the wines were adulterated. Excessive wine drinking also led to a rapidly progressive tuberculosis.

The symptoms caused by wine were, therefore, he thought, really dangerous, and a very strict supervision should be exercised in regard to its adulteration. He thought that a moderate tax should be imposed on wine.

Original Communications.

OPERATIVE SURGERY
IN THE SERVICE OF WILLIAM T. BULL, M. D., AT THE NEW YORK HOSPITAL,

From July 1, 1890, to January 1, 1895.

By E. M. FOOTE, M. D.,
LATE HOUSE SURGEON.

(*Continued from page 302.*)

UTERINE FIBROMYOMA.

In two of the eight cases of fibromyoma of the uterus, it was impossible to lift the uterus out of the pelvis, and nothing was done but an excision of tubes and ovaries on both sides. This was sufficient to check the growth of the uterus in both cases.

In six cases the uterus was drawn out through the abdominal incision, the broad ligaments were ligatured and divided in a manner presently to be described, and an écraseur was passed around the uterus at some distance above the vaginal reflection, and the amputation done above this. Iron wire was usually employed in the écraseur. The peritonæum was closed over the broad-ligament pedicles and about the stump, the latter being held in the lower angle of the wound by a transfixion pin. Above the stump the abdominal wound was closed *en masse.* This treatment of the stump—the so-called "extraperitoneal" treatment—gave satisfaction in every case where it was employed; but today surgeons are discarding it for the "intraperitoneal" treatment. The pin and wires came away in from two to four weeks, and healing was complete in from two to three months. In one case a sinus reopened, discharged a pedicle ligature, and closed again.

On the other hand the treatment of the broad ligament by the interlocking or chain ligature did not prove so satisfactory; and what is said of its use in fibromyoma is perhaps even more true of its use in inflammatory tumors and occasionally perhaps in ovarian new growths. When the pedicle is slender and pliable, a strong ligature of floss silk passed about it as a whole must indeed be very carelessly applied to give any further trouble. But if the pedicle is broad, closely bound down by adhesions, or thickened by inflammatory processes, it is of necessity cut off short, and with a curving incision the condition of affairs is totally different. It is no longer possible to tie it as one piece and the interlocking ligature is employed. When passed, the ends are crossed and the broad ligament is tied in two or more segments. If the ligatures were not interlocked a portion of the stump might escape and bleed. If they are interlocked they pull on one another, and the strain being along the arc of a circle, the tendency is for the ligature to drag off. And this occurs not by the ligature slipping over the peritonæum, but by its slipping with the elastic peritonæum off the denser fibrous portion. In this way pressure may be removed from a blood-vessel and hæmorrhage be set up, at first subperitoneal, and then rapidly escaping into the abdomen through the ligature being already loosened by the withdrawal of part of its contained tissue. That this is no theoretical danger is proved by the fact that it actually occurred with fatal result in a case of fibromyoma (pelvic neoplasms, Case XVI) and in two cases of salpingitis (inflammatory pelvic tumors, Cases I and XIII). In a third case (inflammatory pelvic tumors, Case XVII) it happened before the abdomen was closed, and additional ligatures had to be applied on both sides.

The question naturally arises, Why employ such a risky treatment of the pedicle at all? Why not ligate the individual blood-vessels? That is certainly a much better surgical procedure than this method of including a lot of other tissue. But this ligation of individual vessels takes considerable time, and it is in precisely some of these cases that delay may mean death to the patient. But if only the ovarian artery can be distinguished and tied, either before or after division of the ligament, that of itself would diminish greatly the risk of fatal hæmorrhage.

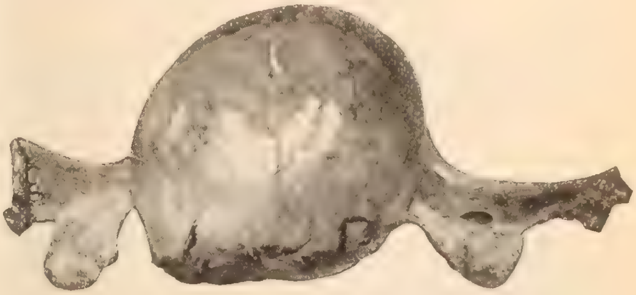


Fig. 10.

If the hæmorrhage occurs, no consideration for the feelings of friends, nor alarm for the patient, should delay further operative procedures for a moment. And all of the symptoms of hæmorrhage need not be present in order to establish the diagnosis. If the reaction is not sustained and the pulse is rapid and feeble, that is enough. A surgeon is naturally reluctant to reopen the abdomen he has closed only a few hours before—a house surgeon still more so; but the man who does this and does it early, deserves the palm. It is the only chance. At least two of these three patients might in all probability have been saved had this been done earlier than it was done.

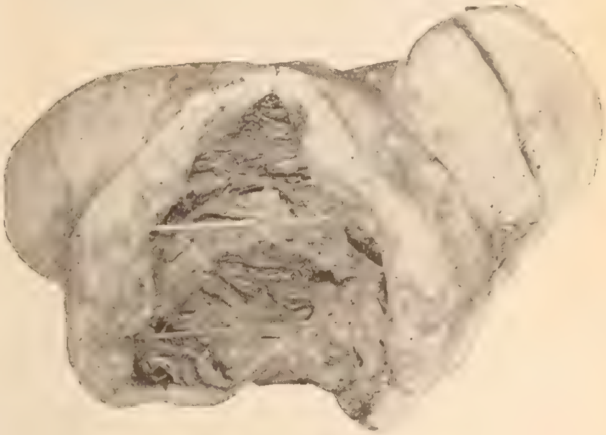


Fig. 11.

An interesting point in connection with these cases of fibromyoma is that in two of them the tumors had grown wholly or in large measure after the menopause.

Fig. 10 shows the enlarged uterus and ovaries after removal in Case XX. Fig. 11 shows the large cystic fibroid removed in Case XXII.

INFLAMMATORY PELVIC TUMORS.

The record includes nineteen cases of pelvic inflammation. Eighteen were treated by laparotomy and excision of one or both appendages, with six deaths. In the other case an abscess was drained into the vagina with a fatal result. In two of the laparotomies (Cases III and VII) the patients died in a few hours from the shock of the operation; in two (Cases I and XIII) they died in twenty-four and forty-eight hours from pelvic hæmorrhage, as a result of slipped ligature; while in two (Cases IV and V) they died of acute general peritonitis in six and two and a half days after the operation. In the case of drainage into the vagina the patient died from absorption of septic products.

Case II, tubercular salpingitis, was complicated with pulmonary tuberculosis, and the patient came to the table in poor condition. The operation was not particularly difficult or prolonged, and the fatal termination in twenty-four hours is to be regarded as a result of greatly diminished power of resistance on the part of the individual.

In Case VII also the patient was in poor general health, and the tubes, which were distended with pus, were everywhere so adherent that their removal meant a complete dissection, with the consequent exposure of a large raw surface to infection. It has often been observed that the shock of this operation is in a sense proportional to the amount of raw surface caused by the separation of adhesions; and it is in cases where this is large that death from shock takes place in a few hours, and that septicæmia proceeds with an appalling celerity.

In Case VIII the abscess pointed so well into the vagina that it was deemed best to drain it in this locality rather than submit the patient to the greater risk of a laparotomy. But unforeseen complications arose. In the first place, the puncture wounded a large vessel, which gave trouble on the table and afterward, resulting in a loss of blood which materially weakened the patient and hastened her end. In the second place, the abscess wall, when the cavity was emptied, retracted so far away from the vaginal vault as to make drainage unsatisfactory. This rendered a second etherization necessary, and this was again followed by repeated small hæmorrhages. Meantime the septic conditions were advancing, and the autopsy showed that no amount of drainage could have relieved them, as the abscess wall was already necrotic in places, and, though the cavity was practically empty, two perforations existed in its upper wall which were scarcely shut off by fresh adhesions from the general abdominal cavity.

In Case X the gradually increasing abscesses had apparently formed between the tubes and ovaries, being continuous with the tube lumina, but dilating the ampullæ rather than the tubes themselves until two large pus sacs were formed in whose walls the ovaries were imbedded. The cuts (Fig. 12) show them in a collapsed condition after removal. The patient made a good recovery. The symptoms, which had been severe and increasing for two years, gradually died away, and to-day she is strong and well and doing hard work as a cook. She has menstruated every two or three weeks since the operation.

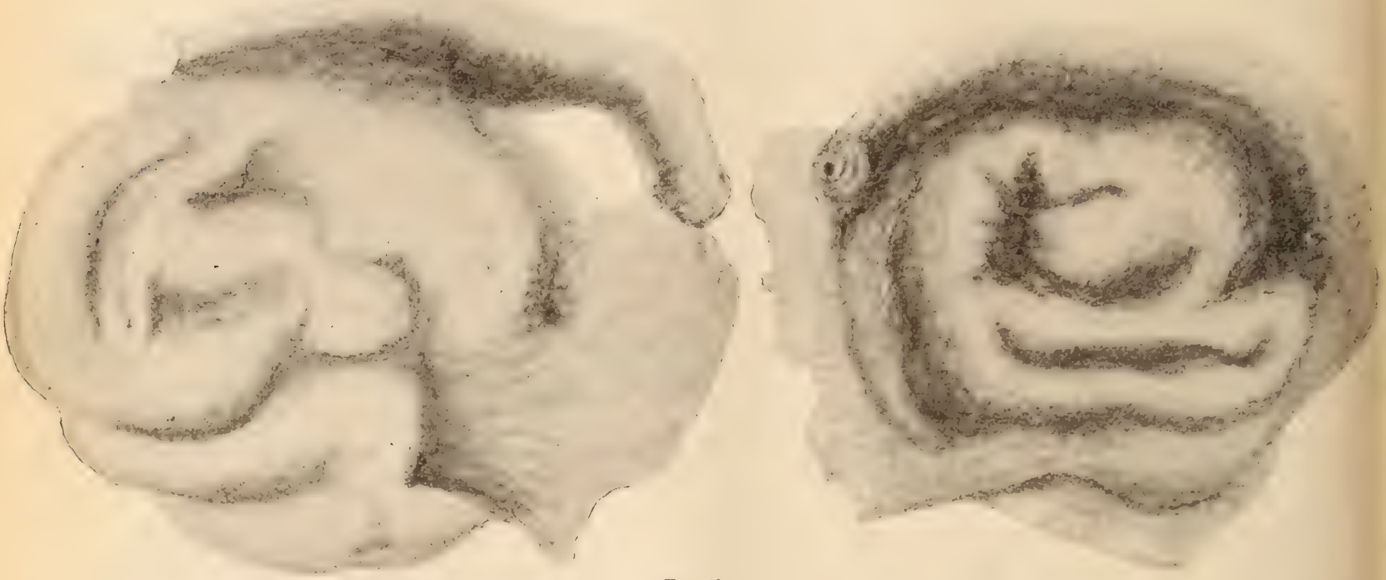


Fig. 12.

Case XIII has already been referred to as one in which death occurred from hæmorrhage in forty-eight hours after the operation. Here, too, the dissection was difficult, and there was considerable oozing from torn adhesions. Both gauze and glass drains were employed, the tube being carried into Douglas's *cul-de-sac*. Only a few drops of blood could be pumped from the glass tube, but the patient died with symptoms of hæmorrhage. An autopsy was refused, but examination through the wound showed the pelvis to contain a quantity of blood.

INFLAMMATORY PELVIC TUMORS.

Number.	Disease, name, age, and date of operation.	Previous history.	Physical examination.	Operation.	After-treatment.	Subsequent history.
1	Chronic diffuse oophoro-salpingitis; E. C. H.; 32 years; Mar. 21, 1891.	Three mos., paroxysmal iliac pains, with purulent discharge and increasing prostration.	T., 99·4°; P., 72. Anæmic and hysterical, and at times delirious; right ovary prolapsed and adherent; tubes empty.	Ether; 2½-in. incision. Tubes and ovaries congested; right ovary adherent; all removed and pedicles tied with floss silk; no hæmorrhage; abdomen closed.	Reacted fairly well. Progressive heart failure; in 24 hours abdomen opened and found to contain much blood, the ligature of the left pedicle having slipped; re-ligated; peritonæum sponged with weak bichloride solution; hypodermic stimulation and intravenous injection of 20 oz. saline solution without avail.	Death in 24 hours from hæmorrhage.
2	Chronic purulent salpingitis and oophoritis; A. L.; 22 years; July 10, 1891.	Miscarriage 20 mos. ago; pain since, left iliac and lumbar regions, and purulent vaginal discharge.	T., 99°; P., 108. Good health; in either fornix is a tender mass.	Ether; 4-in. incision. Tubes and ovaries enlarged; slight intestinal adhesions on the left side; both appendages removed; glass drain in pelvis; wall elsewhere closed.	Tube out in 12 hours and opening sutured; sutures out 11th day; primary union.	Recovery. Not traced since.
3	Chronic tubercular oophoro-salpingitis; E. T.; 21 years; July 16, 1891.	One mo., pain in back and pelvis coming on in menstruation, with fever and prostration; no chills or vomiting.	T., 101°; P., 128. Health poor; has pulmonary tuberculosis; tender mass in either lateral fornix.	Ether; 4-in. incision. Both ovaries cheesy, degenerated, and both tubes are sacculated; appendages removed; considerable pus escaped; iodoform tampon; wound partially closed.	Left the table with a pulse of 140, which ran gradually to 160, and a temperature of 100·6°.	Death in 24 hours; sections of the tubes showed tubercles and tubercle bacilli.
4	Chronic parenchymatous oophoro-salpingitis; A. M.; 30 years; Aug. 7, 1891.	Seven years ago peritonitis; 1 year, pelvic and lumbar pain.	T., 100°; P., 92. Condition good; uterus fixed in retroversion by tender masses in both fornices.	Ether; 3-in. incision. Ovaries cystic and enlarged; tubes enlarged and adherent; all removed; glass drain into pelvis; wall elsewhere closed.	Reacted well. Tube pumped out every 2 hours; 1st day, T. 99·6°, P. 120; 2d day, T. 101·2°, P. 126; 3d day, T. 103°, P. 136; delirious and vomiting; abdomen tympanitic.	Death in 6 days from acute general peritonitis. The abdomen contained free fluid and the intestines were hæmorrhagic and matted together.
5	Chronic purulent salpingitis and oophoritis; M. L.; 22 years; Aug. 25, 1891.	Three mos. ago an abortion, followed by 3 acute attacks of pelvic inflammation, the last one occurring 3 weeks ago.	Condition fair. T., 98·6°; P., 116. Tender masses in both lateral fornices.	Ether. The thoroughly adherent annexa are separated and removed, their attachments and some of the adhesions being tied with silk; no douche; no drainage.	Pulse after operation, 168; in 24 hours a well-marked local peritonitis, which became general by the following day, with fatal result.	Death in 56 hours from acute general peritonitis. The ovaries and tubes presented changes of acute and chronic inflammation, with pus formation.
6	Chronic diffuse oophoro-salpingitis; S. S.; 34 years; Dec. 3, 1891.	Dysmenorrhœa and leucorrhœa 10 years following childbirth.	Condition fairly good. T., 99·6°; P., 96. Ovaries and tubes palpably enlarged, but not adherent.	Ether. Appendages excised; floss-silk ligatures; glass drain in lower angle of wound, which is elsewhere closed.	Reacted well. Fluid pumped from tube every 2 hours; tube out in 48 hours; temp., 101·2°, pulse, 132; vomiting; a small mural abscess delayed union, which was complete in 4 weeks.	Tubes contained a small quantity of bloody fluid and the ovaries were cystic. April 2, 1892: ventral hernia size of fist.
7	Encysted pyo-salpingitis; C. H.; 30 years; Dec. 29, 1891.	Pelvic pain, dysuria, and vomiting 6 weeks; under observation 2 weeks; has irregular chills and P. M. temperature of 104° to 105°.	Condition poor. T., 102·8°; P., 136. A tense tumor in hypogastrium adherent to the uterus, which is low and fixed.	Ether. Tubes distended and everywhere adherent; right tube aspirated, tied, and torn out; the left is opened and douched, but its removal is deemed inadvisable on account of firm intestinal adhesions; a glass drain is placed in this tube, and the pelvis tamponed with iodoform gauze; upper portion of wound sutured.	Was taken from the table in a condition of shock, and did not rally.	Death in 6 hours from shock. Tubes showed chronic and acute suppurative inflammation.
8	Encysted pyo-salpingitis; G. J.; 22 years; Feb. 12, 1892.	One year ago an attack of pelvic pain, fever, dysuria, and sanguineo-purulent vaginal discharge following an abortion; similar attack began 1 mo. ago.	Good condition. T., 99·6°; P., 104. Fluctuating tumor in right fornix displaces uterus; a needle draws pus.	Ether. A trocar inserted in posterior *cul-de-sac* allows 2 oz. of pus to escape; filiform drain; vaginal tampon. Twelve days later, under ether, a tube is inserted, as drainage was not satisfactory; troublesome hæmorrhage.	Hæmorrhage recurs at intervals, and purulent discharge is small. On the 5th day the tube is removed, and a gush of blood from the vaginal artery follows; death 2 days later from sepsis, hastened by loss of blood apparently.	The autopsy revealed a pelvic abscess cavity communicating with the right tube. In the upper wall of the abscess were 2 necrotic openings into the general abdominal cavity; plastic adhesions were slight; no evidence of peritonitis except in the pelvis.

Number.	Disease, name, age, and date of operation.	Previous history.	Physical examination.	Operation.	After treatment.	Subsequent history.
9	Catarrhal salpingitis, cyst of ovary; A. G.; 19 years; Mar. 5, 1892.	Seven mos., lumbar pain, dysuria, and profuse leucorrhœa following abortion.	Good condition. T., 99·8°; P., 68. Ovaries enlarged, especially the right one, but not adherent; marked tenderness.	Ether. Both ovaries cystic, and in the right one a large blood-clot; slight recent adhesions about tubes. Aunexa removed; the pedicles tied in halves and *en masse* with floss silk; abdomen closed in layers.	Reacted well. Rectal alimentation; has several stitch hole abscesses; wound entirely healed in 30 days.	Two mos. later has relief of all symptoms except the urethritis.
10	Encysted pyo-salpingitis and oophoritis; M. Z.; 30 years; April 15, 1892.	Two years, dysuria, leucorrhœa, and increasing sacral pain.	Condition fairly good. T., 100°; P., 84. On either side of uterus are large cystic tumors only slightly adherent, and easily palpable abdominally.	Ether. The cysts were spheroidal, about 3 in. in diameter, and communicating with the tubes. Appendages removed entire, the pedicles being ligated in halves with floss silk and the stumps touched with iodoform; the cysts are ruptured in removal; wound closed in one layer except where glass drain and iodoform gauze leads to Douglas's *cul-de-sac*.	Reacted well. On account of nausea is fed by enemata for several days; tympanites for a week; in the 2d week a small mural abscess opened spontaneously; wound healed in 3 weeks.	The cyst cavities communicated with the tubes, and lay between the fimbriated ends and the ovaries. Several months after operation the scar opened and discharged 2 silk ligatures. April 15, 1895: In excellent health; has menstruated every 2 or 3 weeks since the operation. Sacral pain persisted for a year or more after the operation. There is a small hernia in the scar; either side of the uterus is a mass about as large as a normal ovary, but harder and not tender.
11	Chronic purulent salpingitis and oophoritis; E. F.; 34 years; Oct. 1, 1892.	Six years has had repeated attacks of pelvic inflammation, the last one only a short time ago.	Condition fair. T., 102·6°; P., 102. Uterus retroverted and fixed; masses felt in both fornices.	Ether. Both tubes thickened and closely adherent to the inflamed and adherent ovaries; the right ovary contains a cyst as big as an orange. Appendages removed entire after some difficult dissection; pedicles tied *en masse* with silk; glass and gauze drain in pelvis; wound elsewhere closed.	Reacted well. Glass drain out in 48 hours; 2d day, collapse, due to heart failure; has had such attacks before; 7th day, drain site discharged fæcal matters until 14th day; none later.	Left the hospital in 4 weeks with a small sinus 3 in. deep.
12	Chronic purulent salpingitis and oophoritis; A. W.; 25 years; Nov. 14, 1892.	Six mos. ago an instrumental abortion, followed by pelvic inflammation and leucorrhœa.	Condition good. T., 98°; P., 92. In left broad ligament is a movable, tender, fluctuating mass as big as an egg.	Ether. Left tube is dilated into a pus sac; left ovary enlarged. Adhesions readily separated; broad ligaments and tube tied in 2 sections and appendages removed; left tube less dilated; irrigation with boiled water; no drain.	Reacted well. Sutures out on 10th day; primary union; up in 3 weeks.	A slight leucorrhœa at discharge, due to endometritis.
13	Chronic parenchymatous oophoro-salpingitis; M. M.; 18 years; Nov. 26, 1892.	Never pregnant; leucorrhœa and pelvic pain since marriage, 8 mos. ago; menstruation every 2 weeks.	Condition fair. T., 98·4°; P., 102. Both tubes thickened and tender.	Ether. Left appendages enlarged and very adherent; are loosened with difficulty; right appendages less adherent; both are removed, the pedicles being ligatured with interlocking silk sutures; considerable oozing from posterior surface of uterus and from rectum; irrigation with boiled water; glass and gauze drain.	Reacted poorly and went into collapse; a small amount of blood pumped from glass drain; death in 48 hours, with symptoms of hæmorrhage.	Death in 24 hours. Examination through the wound showed the pelvis to be full of blood, but the ligatures apparently in position.
14	Chronic parenchymatous oophoro-salpingitis; O. G.; 23 years; Feb. 13, 1893.	Six weeks, right iliac pain and leucorrhœa and metrorrhagia.	Condition fairly good. T., 100·4°; P., 88. A firm, hard mass behind uterus on the right.	Ether. Right tube thickened and distorted; right ovary enlarged; adhesions easily separated; left side not enlarged or adherent. Both appendages are excised and the pedicles tied with floss silk; slight oozing; iodoform gauze drain.	Reacted well. Gauze out in 24 hours; union except at drain site; 16th day, up.	Not traced since.
15	Chronic purulent salpingitis and oophoritis; L. D.; 36 years; Oct. 5, 1893.	Thirteen years ago, following confinement, an attack of pelvic inflammation; many recurrences since; the last 4 weeks ago.	Condition good. T., 100·8°; P., 104. Both fornices resistant and contain tender masses; uterus fixed.	Ether. Adhesions dense about both tubes and ovaries. Both appendages removed; stumps ligatured with interlocking silk; gauze drain.	Reacted well. Gauze out 2d day and a rubber tube introduced and removed on the 4th day; wound healed in 3 weeks.	Not traced.
16	Chronic purulent	Married 6 mos.; 2 mos. ago pelvic inflam-	Condition fairly good. T., 100·6°; P., 120.	Ether. Adhesions to intestines, both sides; both tubes enlarged.	Reacted well. Primary union; temperature	Not traced.

Number.	Disease, name, age, and date of operation.	Previous history.	Physical examination.	Operation.	After-treatment.	Subsequent history.
	salpingitis and oophoritis; I. W.; 20 years; Oct. 25, 1893.	mation, lasting 2 weeks.	A tender mass on either side of the movable uterus.	Both appendages removed; stumps ligatured with interlocking silk; no hæmorrhage; stumps touched with bichloride, 1 to 1,000, and abdomen closed.	never above 100·2°; up in 3 weeks.	
17	Chronic diffuse oophoro-salpingitis, parovarian cyst; E. McC.; 33 years; Dec. 18, 1893.	Never pregnant; pelvic pain for many years; worse the past year; slight leucorrhœa.	Good condition. T., 98·2°; P., 72. A soft, fluctuating tumor in left fornix; resistance in right fornix; uterus movable.	Ether. Both tubes thickened and ovaries cystic, and a thin-walled cyst in left broad ligament. Appendages removed; interlocking silk ligatures failed to control hæmorrhage, and a second one applied on either side; wall closed in layers; no drainage.	Reacted well. Primary union. Left the hospital in 4 weeks.	May, 1895: In good condition; no hernia.
18	Chronic diffuse oophoro-salpingitis; C. N.; 27 years; Jan. 12, 1894.	Six weeks ago an abortion, followed by an attack of pelvic pain and tenesmus, and later a purulent vaginal discharge.	General condition good. T., 100·2°; P., 92. A mass the size of a lemon in left fornix; not tender.	Ether; 3-in. median incision. Uterus is enlarged and adherent. Left ovarian tumor removed with its tube; pedicle ligated with floss silk; right tube and ovary appear normal, and are not removed; wound closed.	Reacted well. Seventh day, sutures out; primary union; 14th day, up.	Not traced.
19	Encysted pyo-salpingitis, cyst of ovary; A. M.; 26 years; Mar. 4, 1894.	Five weeks ago, after menstruation, chill, fever, and right iliac pain; condition improved by treatment.	Uterus movable and displaced to the right by a tender, fluctuating mass in left fornix.	Ether; 5-in. median incision. Right tube is enlarged; removed with the right ovary; left tube enlarged and adherent to the sigmoid and the enlarged and cystic ovary; they are separated and removed; pus which escaped mopped up with 1 to 1,000 bichloride-of-mercury solution gauze drain in pelvis.	Reacted well. Gauze out in 48 hours; sutures out in 8 days; primary union.	June 20, 1894: No hernia; considerable pelvic pain.

SURGERY OF THE GENITO-URINARY SYSTEM.

Of the eighty-three operations performed upon the genito-urinary tract, ten were upon the kidney, nine upon the bladder, and twenty-one upon the urethra. The radical operation for hydrocele was ten times performed; that for varicocele twelve times. There were four cases of castration—one for carcinoma, one for gonorrhœal abscess, and two for tuberculosis. There were also recorded seventeen minor surgical operations, three upon the male genitals and fourteen upon the female.

Five of the patients died in the hospital, but in only two of the cases is death directly chargeable to operation. One of these was the removal of a carcinomatous testicle, with death in seven days with uræmic symptoms. This case is described among the malignant tumors. The other followed the withdrawal of a catheter two days after external urethrotomy. The history, as well as those of the other cases in which the disease terminated in death in spite of operation, is given below.

OPERATIONS UPON THE KIDNEY.

Besides the eight operations which are here briefly described, nephrorrhaphy was twice performed for painful wandering kidney, both times with success, although in one case the silkworm gut which was used to stitch the kidney in position had to be removed in order to close the wound.

Nephrotomy was eight times performed without a death. This operation has only recently been generally performed, and its mortality is not yet decided upon. It certainly is not high. Bonne, in January, 1888, collected all the cases in which the kidney was opened for stone reported up to that date. There were fifty cases with eight deaths. Gay * collected sixty eight additional cases with ten deaths. This gives a mortality of sixteen per cent. and fourteen per cent. In 1887 E. O. Otis reported forty-two cases with a mortality of nine and a half per cent.

In the eight cases here reported stone was found present in only three. In two others the operation was necessary to relieve the accumulation of fluid. One of these was known to be tubercular at the operation, as bacilli had already been demonstrated in the aspirated fluid. In the other it was thought that the distention might be due to a stone, but none was found either at this operation or after the kidney had been removed at a later date.

That leaves three cases in which stone was suspected from the history but not found at operation. This is a mistake which has often been made and must continue to be made. Treves reports thirty such cases. It is important that the kidney be opened as soon as possible after a stone is formed; so that there is always the danger of opening it after the stone has passed into or through the ureter.

In one of these cases the pus and blood present seemed to indicate the possibility of a calculus in the ureter. None could be detected by probe, but in this and other cases where it was attempted probing of the ureter proved very unsatisfactory. In a second case there was evidence of an old and a fresh infarct. In the third case, as the surface of the kidney appeared normal and a needle thrust in various directions touched no stone, the kidney was not incised.

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* *Boston Medical and Surgical Journal*, August 11, 1892, p. 134.

An unfortunate complication occurred in one case, in which, on account of the hæmorrhage, it was necessary to sacrifice the kidney to save the patient's life. This is a rare occurrence. The hæmorrhage from the cut kidney may be free, but is usually easily controlled by slight pressure.

CASE I. *Hydronephrosis; Incision and Drainage; Subsequent Nephrectomy; Recovery.*—J. G., a lad, aged fifteen years. For six months fullness of abdomen and for one month a distinct swelling in the region of the right kidney; no fever. Urine, 1·013 alkaline, with a faint trace of albumin, but no renal elements in the sediment. Examination showed a cystic tumor in the right lumbar region containing a urinaceous fluid, as demonstrated by aspiration.

March 7, 1890.—A three-inch incision was made parallel to the last ribs four inches from the vertebral spines. A cyst wall readily found and incised. A pint or more of fluid escaped. Tubes left in. The resulting sinus continued to discharge urine in large quantities, and two months later Dr. Weir, who had charge of the service at that time, decided to remove the kidney. This was successfully accomplished, the wounds closed readily, and four years later the patient is in excellent health.

No cause was found to explain the hydronephrosis. The excised kidney was twenty-two by eight centimetres. The pelvis was greatly dilated. The surrounding wall, which varied in thickness from half a centimetre to one centimetre, contained in places normal and in places inflamed kidney substance. Examination for echinococcus and tuberculosis were negative.

CASE II. *Renal Calculus with Suppurative Pyelitis; Nephrotomy; Recovery.*—J. McL., a man, aged fifty years. Ten years ago, gonorrhœa; five years ago cystitis and occasional hæmaturia. Tumor in left hypochondrium noticed ten days ago. Needle drew pus.

March 17, 1891.—A three-inch incision was made parallel to the last rib. The kidney readily exposed and opened, and pus and soft stones escaped from a number of cavities. Kidney thoroughly cleaned out and drained. The drainage-tube was removed in four weeks, and in six weeks the wound was quite healed. The stones were chiefly phosphatic and no tubercle bacilli could be demonstrated in discharge or in the urine.

CASE III. *Renal Colic; Hæmaturia; Nephrotomy.*—J. T., a man, aged fifty-one years. Had suffered for two years from severe pain in the left lumbar region with almost daily hæmaturia. Had also pain on right side. Left kidney palpable and tender. Considerable emaciation.

March 21, 1892.—A five-inch incision parallel to the left twelfth rib exposed the kidney. Incision into it opened a cyst containing bloody fluid, but no stone could be found by the finger or a searcher. A drainage-tube was left in. Pain and hæmaturia were relieved. The wound discharged at first bloody urine which soon became clear; and if the drainage was not free pain returned. The patient left the hospital three months later with a sinus. A few weeks later it was learned from a member of his family that he died in another city on the table while nephrectomy was being performed.

CASE IV. *Cystitis; Tubercular Pyelitis; Nephrotomy followed by Nephrectomy and Death.*—M. C., a girl, aged nineteen years. Gave a history of cystitis for eighteen months, supposed by her physician to be due to stone in the bladder. On entrance to the hospital the right kidney was found to be much enlarged, but not tender. The urine contained pus and a little blood, and pus aspirated from the loin was found to contain many tubercle bacilli.

June 18, 1892.—The kidney was exposed by a three-inch incision parallel to the last rib, and the pus cavity opened and drained. After two months' irrigation, combined with constitutional treatment, the patient had grown much worse, and in Dr. Bull's absence, Dr. Stimson performed nephrectomy with a fatal result.

CASE V. *Renal Colic; Nephrotomy; Recovery.*—P. C., a man, aged sixty years. Had an attack of renal colic dating back fifteen years, not affecting the general health. The left kidney was found palpable, but not tender. The urine contained neither blood nor sand.

June 27, 1892.—By a three-inch incision parallel to the twelfth left rib the kidney was exposed. Its surface showed a scar and a more recent infarction. Puncture with a needle did not detect a stone. The wound was allowed to heal by granulation, and during the month which followed the operation the symptoms of colic did not recur.

CASE VI. *Renal Calculus; Nephrotomy; Recovery.*—E. G., a woman, aged twenty-seven years. Had several attacks of renal colic in the two years preceding entrance. The urine contained a little pus and blood, and the kidneys were impalpable.

April 28, 1893.—By a four-inch incision parallel to the last rib the right kidney was exposed. By palpation a hard substance could be felt in the lower part of its pelvis. It was incised and a stone as large as a hazelnut removed. The wound was drained with gauze, and a small rubber tube led to the opening in the pelvis of the kidney. The passage of clotted blood through the ureter gave several attacks of colic. The healing of the wound was delayed by the formation of a pocket of pus on the anterior surface of the kidney. Recovery was complete in six weeks.

CASE VII. *Renal Colic; Kidney Exposed and Probed; Recovery.*—A. R., a man, aged thirty years. For six months was subject to attacks of renal colic increasing in severity and frequency. The urine contained pus and blood.

May 3, 1893.—By a four-inch incision parallel to the last rib the kidney was exposed. To gain more room the posterior end of the incision was continued upward at right angles to the main incision. Probing of the kidney revealed no stone and the wound was closed. It healed primarily and until his discharge, two weeks later, the colic had not returned.

CASE VIII. *Renal Calculus; Nephrotomy; Nephrectomy; Recovery.*—M. B., a man, aged twenty-four years; gave a history of attacks of left lumbar pain for nine years. Good general health. Urine contained a little pus and blood. Kidneys not palpable.

December 15, 1893.—By the usual incision the kidney was exposed. A probe detected a stone; the pelvis was opened and the stone removed. Bleeding from the cut surface of the kidney was profuse and not readily controlled by packing with gauze. Four hours later, as the bleeding continued, under chloroform the kidney was drawn into the wound, its pedicle ligated with silk, and it was then excised. Except for a small sinus recovery was complete at discharge one month later.

OPERATIONS UPON THE BLADDER.

Suprapubic cystotomy was performed eight times: three times for stone, with prompt cure; three times for persistent perineal fistula, with cure in one case and improvement in the other two; and twice for obstinate cystitis, with relief of symptoms, and death some weeks later from progression of the disease.

The more interesting cases are the following:

CASE IX. *Traumatic Rupture of Urethra and Perineal Fistula; Plastic Operation and Suprapubic Cystotomy; Recovery.*—L. L., aged twelve years, was kicked in the perinæum. Rupture of urethra and perineal fistula resulted. In the following fifteen months the site of injury was four times operated upon without success. When the suprapubic operation was undertaken, September 13, 1890, the gap in the urethra was three fourths of an inch in length and the opening anteriorly and posteriorly was almost lost. A very small suprapubic opening was made in the distended and elevated bladder and a rubber catheter left in. The perineal wound was fastened and restored as far as possible to its normal condition. The wound entirely healed in thirty-two days, when the catheter was removed from the suprapubic opening. This closed immediately, and urination was normal and the urethra easily admitted a No. 16 French steel sound.

CASE X. *Perineal Fistula following Gonorrhœal Stricture; Suprapubic Cystotomy; Two Cases.*—In F. F., aged thirty years; with a venereal history. A perineal abscess broke four months before operation and a fistula persisted. The urethra admitted a No. 30 French sound. The suprapubic opening was made September 27, 1890, and a tube left in. Eight days later the bladder shifted its position so much that it was found impossible to reintroduce the tube, which had been removed for cleansing. The peritoneal wound was not entirely closed at that time and persisted though much reduced in size.

CASE XI.—R. H., aged thirty-five years. External urethrotomy had been performed at the New York Hospital two years previously, for gonorrhœal stricture. A small fistula persisted, and the passage of instruments being neglected, the stricture recurred. At the time of operation, October 18, 1890, no instruments could be passed more than five inches, and all of the urine was voided through the fistulous opening just in front of the anus. By means of a trochar plunged into the dilated bladder a catheter was introduced suprapubically. External urethrotomy was again performed, the urethra being cut to admit a No. 30 French sound. Suprapubic drainage was continued for forty days, when, as perineal wound and fistula seemed solid the catheter was withdrawn. Eight days later the perineal wound reopened and all the urine was passed by it. The fistula remained healed.

CASE XII. *Tumor of Bladder; Cystitis; Suprapubic Cystotomy; Pyelitis; Death in Six Weeks.*—J. B., a man, aged seventy-two years; cystitis for six years; hæmaturia for seven months; fair health. By the cystoscope a tumor in the base of the bladder was made out.

August 21, 1891.—Exploratory incision was made above the pubis. The tumor was found to be sessile and nearly the size of an egg with an ulcerated centre. Its removal was not attempted. The urethral orifice was normal. A Trendelenburg tube was left in the wound. The patient's general condition did not improve, and the wound showed little inclination to close. Several weeks later he developed pyelitis, with suppression and death a month and a half after operation.

CASE XIII. *Nephritis, Cystitis, Suprapubic Cystotomy; Pyelitis; Death Two Months Later.*—J. S., a man, aged fifty-five years. Twenty-five years previously gonorrhœa. For two years painful micturition, bloody urine, sometimes containing sand. No stone could be made out on entrance, though the urine contained pus and blood. Epithelial cells and considerable albumin (one third per cent. by weight).

March 14, 1891.—Suprapubic cystotomy; no stone in bladder; a Trendelenburg tube left in the bladder. There was relief of symptoms after the operation, but the urine remained foul. There was a daily fever of four to five degrees, and in two months the patient succumbed. For two weeks before death there was great tenderness in the lumbar region, due apparently to pyelonephritis, but permission to determine the exact condition post mortem could not be obtained.

In connection with these cases the following table, showing results of all cases of stone operated on by Dr. Bull in the past ten years, will be of interest:

OPERATION.	No. of cases.	Recovered.	Died.
Lithotrity	2	2	. .
Litholapaxy.	7	5	2
Lithotomy-perineal.	9	9	. .
Lithotomy-suprapubic	12	12	. .
Total	30	28	2

Of the two fatal cases after litholapaxy one was a young adult, who, without any symptoms referable to bladder or kidney, died apparently of gastroenteritis; the other was an old man with large phosphatic stone, who died of cystitis and nephritis about a week after operation.

Perineal section was performed for cystitis in only one case, that of O. E., aged thirty-three years, who suffered for many years from cystitis following injudicious treatment of a stricture. The urine was alkaline and contained much pus, and was not much improved by medicinal treatment, local and general. The urethra admitted a No. 30 French sound. On September 16, 1890, a median incision was made in the perinæum and a catheter introduced into the bladder. This was kept in four weeks, and on its removal the condition of the bladder had so much improved that the patient could hold his water several hours. A small fistula persisted and resisted all attempts to close it. Two years later the fistula still existed, the cystitis was still present in a moderate degree, and the patient had developed a unilateral pyelitis which markedly affected his health. Nephrectomy was advised and refused. It was possible to demonstrate that only one kidney was affected by the following simple plan: A catheter was passed and the bladder irrigated until the returning fluid was clear. Slight pressure upon the affected kidney clouded the escaping fluid at once, while pressure on the other kidney had no effect upon it.

CASE XIV.—*Stricture of Urethra; Extravasation of Urine; Internal and External Urethrotomy; Death.*—This patient, B. L., gave a history of gonorrhœa eight years previously, with symptoms of stricture for one year, and a perineal swelling of three days' duration, which had been opened previous to admission to the hospital. He was in fair health. The urethra permitted only a filiform bougie to enter the bladder. The anterior strictures were cut with a Maisonneuve instrument. A perineal section was made, and the anterior strictures further divided to 34 French with Otis's urethrotome. A catheter was introduced through the wound into the bladder and iodoform gauze packed about it. For forty-eight hours there were no unpleasant symptoms. The catheter was then removed. The first urination, which took place some hours later, was followed by a violent chill with a temperature of

105·2°, falling in six hours to 101°. Twelve hours after this chill a severe collapse developed with a temperature of 95·4° and suppression of urine. Despite every effort the patient died about twenty-four hours after the chill—forty hours after the operation. The post-mortem temperature was 109·6°. There was no autopsy.

Case XV. *Stricture of Urethra; Periurethral Abscess; Nephritis; External and Internal Urethrotomy; Uræmic Coma; Death.*—J. N., aged fifty-four years. Strictures for fifteen years. One week before entrance unsuccessful attempts were made to dilate them. Treatment followed by chill and extravasation of urine. On entrance there was a large periurethral abscess.

November 7, 1892.—This was opened and the strictures, the smallest of which admitted only a filiform bougie were divided by internal and external urethrotomy. The patient reacted well. The urine showed advanced nephritic changes, which increased, and death in uræmic coma followed the operation by twenty-two days. The external wound was healthy, but autopsy showed that an abscess connecting with the deep urethra involved the whole prostate, and extended up along the bladder. Both kidneys presented well-marked signs of chronic diffuse nephritis.

One of the most interesting plastic operations was the following:

Case XVI. *Congenitally Misplaced Anus; Plastic Operation; Restoration.*—L. M., female; was born with an imperforate anus. The rectum terminated just behind the vagina, the two being separated only by mucous membrane. At six months the rectal opening was enlarged. Function was normal, except when diarrhœa was present; then there was inability to retain the stools. At fourteen years of age, when the patient applied for operation, the uterus and vagina were normal, the rectal opening was as described, there was a well-marked sphincter in its proper place, and in its centre a dimpling of the skin represented the anus.

November 26, 1892.—Dr. Bull dissected the rectum free from all its surroundings for an inch and a half, made an incision directly backward, splitting the perinæum to the centre of the sphincter, transplanted the rectum to this its normal position, stitched it to the skin, and closed the wound anteriorly with seven silver-wire stitches, as one closes a lacerated perineal wound. Recovery in appearance and in function was prompt and perfect.

(*To be continued.*)

NOTES ON DIET IN SUMMER DIARRHŒA.

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There are two main points in the treatment of the summer diarrhœa of infancy: first, the diet; second, medication.

They are both of great and perhaps of almost equal importance. Still, if it were necessary to choose between the two, I would treat my cases by diet alone, rather than with medicine alone. Better results may be expected from a strict diet without medication than from the best therapeutic effort with no attention given to diet. The two, antiseptic medication and careful diet, make a very strong combination for cure.

It has been my fortune to have some mothers tell me that the doctor did not order any particular diet. Again, it is not uncommon for the attending physician to prescribe a starch-containing food to an infant of two or three months, careless of his salivary and pancreatic physiology.

If the proper sterile food be given, the babe will not have diarrhœa any more in the summer than in the winter, for one of the main causes will be absent. The nursling nourished from the breast exclusively lives upon a perfect, sterile food, and therefore does not suffer from fermentative diarrhœa. If a breast-fed infant has diarrhœa, one of three factors enters into its ætiology: either some other food has been given, or the mother has diarrhœa, or else some rare factor in the form of some other disease enters in, as, for instance, malarial toxæmia.

Only the first, improper food, can enter in as a cause of summer diarrhœa. The others are, of course, of equal importance at all seasons. Of course, all agree that the nearer the food supply is brought to the standard—*i. e.*, the mother's milk—the less danger of fluxes, and that the farther away from the type and the more complex the food is, the greater the danger and the greater the number ill.

Practically, home sterilization of modified cow's milk, under the careful instruction of the medical attendant, meets the indications. By giving a sterilized food we discourage the development of bacteria, which the researches of Vaughan, Escherich, and others have shown swarm in the alimentary canal, increasing very greatly when diarrhœa is present.

But we must go further than this; we must tell the mother what she may *not* give, as well as what she may give. Table food must be absolutely prohibited during the hot weather if the child younger than two years is to be kept well. If this is done the bugbear of the second summer difficulty of rearing will disappear.

All classes are equally foolish on the question of infant diet—the intelligent and cultivated wife of a clergyman equally so with the ignorant wife of a longshoreman. The former will give her child potato and gravy, aided and urged on by her reverend spouse, while the latter will give her nursling a "sup of beer" or a "bit of cabbage." The high-class man will give his infant a little plum pudding or a bite of banana, the laborer will stop at nothing that he happens to be eating. Now, this is all done in pure parental love, but how misguided and what harm resulting! The enormous summer death-rate among the very young is largely thus caused, and if the proper food was given might to a great degree be avoided.

There is constantly going on a school in which the pædiatrist is the instructor and the young mother is the scholar, and very apt some of them prove, and these mothers are being taught what is proper and what is not proper food for their young charges.

I have been in the habit of asking mothers very particularly, What do you give baby besides the breast? Where a woman fences and practically refuses to give the whole truth—and they do so often to avoid responsibility or through carelessness—some very sharp and careful questioning has to be done to elicit the whole story. I ask them, What do you give baby to eat? Does baby sit at the table? How do you feed baby? Do you give her just a little table food? Do you let her suck a piece of meat? Does baby sit on your lap at the table? Do you give her "just a taste" of what you are eating? Sometimes taking it for granted that food is given, surprises them into the truth—thus: Of course you give baby a little meat to chew and a little baked potato? This is usually acknowledged, and much more sometimes. If the mother, having been impressed, promises not to give table food, and if she appreciates the danger of giving it, the battle is half won. Where quotation marks occur in this article, they inclose actual answers given by the mother or nurse to some form of the question as to the food given, taken down at the time from their lips.

Case I.—Mary D., seven months old; diarrhœa. "I give her everything I eat myself. I gave her some grapes, and I think that is the cause of her sickness." Child put on breast alone.

Case II.—John R., nine months old; diarrhœa. "I give baby everything I eat at the table, and the breast." All table food was denied, the breast milk was given, and recovery was prompt.

Case III.—Joe E., eleven months old; suffering from inflammatory diarrhœa; blood and mucus in passages, with fever. I saw Joe on September 11, 1891. The babe was put upon modified sterilized cow's milk instead of "table food exclusively." He was ordered fed every three hours and all other food to be withheld. Calcium salicylate and the subnitrate of bismuth were given for the flux.

September 18, 1891.—Passages containing blood had ceased and child is recovering. Treatment was continued.

21st.—Child was brought back with the following history: He had about recovered, when his mother gave him some "cabbage and bread." He promptly had a relapse; blood, mucus, and fever again—was it any wonder!—and the suffering and treatment had to be gone all over again to cure.

Case IV.—Mary A., aged eight weeks; diarrhœa. This child was fed on imperial granum and cow's milk. Not being able to digest the starch contained in the granum, diarrhœa resulted. The treatment required was obvious and successful.

Case V.—Theresa M., twelve months old; diarrhœa. This child was breast fed. The mother carelessly gave her table food promiscuously, and diarrhœa resulted. I ordered her put back upon the breast, to the exclusion of all other foods, and to be nursed every three hours only. Rapid recovery was had without medication.

This case is a type of a large number which will get well by diet alone. If the infant is breast fed the problem is an easy one.

Case VI.—Charles W., diarrhœa. This child was breast fed until the age of six months, when his mother decided that he was old enough to be fed from the table. She promptly gave to the child and he fell ill. I put him back on his natural supply and he recovered without medication.

Case VII.—Thomas L., nine months old; diarrhœa. On being questioned mother said: "I give him everything I eat at the table and the breast." Child was put upon the breast alone without medication on October 9, 1892; five days later, mother reported the child well.

Case VIII.—George D., two months old; diarrhœa caused by a peculiar habit of his mother's. She said: "I always give baby crackers after his bath." Treatment consisted in putting the child on the breast alone; rapid cure.

Case IX.—Jamie M., twelve months old; diarrhœa. Mother on being interrogated stated: "I give baby mashed potato, cabbage when I have it." The child was put on sterilized milk without medication and cured.

Case X.—John S., seven months old; diarrhœa. "I have fed baby on soda crackers and milk since he was three weeks old," is the mother's testimony. He was placed upon sterilized milk and was soon well. No medicine given.

Case XI.—James A., three months old; diarrhœa. Mother insisted on feeding the infant with potato. She said: "I do not believe the child would be nourished unless I gave him potato." I insisted that she should stop until the child was of a proper age to digest potato, but she persisted in obstinately refusing to promise to stop. I tried to explain to her and reason with her, but it was of no avail; so I refused to treat the case.

If this woman persevered in her foolishness the child in all probability died before the end of the summer. It is seldom that a mother is not anxious to carry out to the best of her ability the dietary directions of her physician if these are strongly impressed upon her.

Case XII.—Daniel S., eleven months old; inflammatory diarrhœa. Cause, free use of table food. The child was put upon exclusive diet of sterilized cow's milk and medicated with the salicylate of calcium, the benzoate of sodium, and the subnitrate of bismuth, and promptly cured. Four days after recovery child was again ill. Inquiry elicited the fact that he had been given table food again. So we had to go over the same road again.

It is very wearying to go over and over, with careless mothers, the proper dietary, and to have them so almost criminally thoughtless in this regard.

I have heard more than one pædiatrist declare, "I am done telling mothers what they should give," but these same men keep on in their careful, painstaking, life-saving way.

Case XIII.—James C., nineteen months old, was brought to me on September 15, 1894, with the following history: Has had diarrhœa for two months. Different medicines had been given by the attending physician, who, according to the mother, had not prescribed any special diet. Child had been taking "regular table food." A lady friend advised that "sweet potatoes be given to baby, as they were very binding."

I put the child upon breast milk every three hours at night alone, as the supply was deficient, and ordered equal parts of cow's milk, limewater, and barley water, the whole to be mixed and sterilized, and given every three hours in the daytime to supplement the natural supply. Bismuth, benzoate of sodium, and calcium salicylate were given for the diarrhœa.

September 18th.—Mother reported, "One passage to-day."

22d.—Diarrhœa cured.

Case XIV.—John Q., four months old. I saw him on August 30, 1893. He was suffering from diarrhœa and inanition. He was much emaciated and listless. He was being starved on grain foods. I gave him bismuth and ordered modified sterilized cow's milk to be given every third hour.

September 4th.—Child was brought back constipated, milk agreeing, and the little one showing signs of life. Smiling.

11th.—Babe picking up flesh. No more diarrhœa.

CASE XV.—Laura T., four months old; diarrhœa caused by mother changing food from the breast to a commercial starch-containing food. I explained to her that her babe was of too tender an age to digest such foods. The breast milk having entirely failed, I put the child on modified sterilized cow's milk, without medication, and cure promptly resulted.

CASE XVI.—Nettie McC., eighteen months old; diarrhœa. Her mother said: "I give her bread and butter, potatoes, meat, and 'most everything except greens." She seemed to think that greens was the one dreadful thing. Child was put upon sterilized milk exclusively and cured.

CASE XVII.—Florence M., four months old; diarrhœa. Green, slimy passages. Mother testified: "I give her cornstarch twice a day besides the breast." Babe was put upon the breast alone and recovered.

CASE XVIII.—John G., twelve months old; diarrhœa. Mother admitted giving "potatoes and bread." I suspect she gave many other things. Gave breast also. He was put on the breast alone, without medication, cure resulting.

CASE XIX.—Josie P., twelve months old; inflammatory diarrhœa. Mother said: "I give him meat, bread, and table food generally." Child was put upon sterilized milk and medicated with ergot and the subnitrate of bismuth, five minims of the former and five grains of the latter, every two hours; recovery.

CASE XX.—Sadie Q., eight months old. First saw the baby on September 18, 1893. She was suffering from an attack of diarrhœa. Mother testified: "I nursed her until two weeks ago, when I weaned her; since then she has had table food." The child was placed upon Meigs's cream mixture and antiseptic medication.

September 25th.—Child well.

21 HANSON PLACE.

FUNCTIONAL ALBUMINURIA.

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ALBUMINURIA, according to our present knowledge, may occur not only as a symptom of truly organic changes affecting the kidney structure, but also as a manifestation of a purely functional anomaly on the part of the body economy.

It is this latter class of which I wish to speak particularly at this place—a class the importance of which can not be overestimated, and the study of which will, in the course of time, become regarded as essential to a full appreciation and understanding of the truly organic forms of albuminuria.

The occurrence of albumin in the urine was regarded up to comparatively recent days as an absolute indication of organic disease affecting the renal parenchyma, a view which even now is held by the majority of physicians. Doubts as to the correctness of such a standpoint were, however, raised as early as 1827 by Bostock (*Bright's Reports on Medical Cases*, London), Becquerel in 1841 (*Séméiotique des urines*, Paris, pp. 394 and 559), Simon in 1842 (*Lehrbuch der med. Chemie*, Berlin, vol. ii, p. 382), C. Schmidt in 1850 (*Zur Charact. der epid. Cholera*), and Canstadt (*Lehrbuch der speciellen Pathologie*, 2d ed., vol. ii, p. 182), and still later by Harley (*Medical Times and Gazette*, 1865), Foster (*Journal für Anat. und Physiol.*, 1866, vol. i, p. 167), Bechamp (*Compt. rend.*, 1865), as also by Vintschgau and Cobelli (*Wiener Akadem. Sitz.*, vol. lix, 1866, p. 283).

As these observations, however, were based upon the employment of methods the delicacy as well as accuracy of which left much that could be desired, they were received with a certain degree of reserve.

Such objections can no longer be raised against more modern investigations, and almost daily new series of observations appear in the various medical journals dealing with the so-called physiological albuminuria, and making the existence of such appear highly probable. Among these there should be mentioned the studies of Frerichs, J. Vogel, Ultzmann, Guencau de Mussy, Leube, Gull, Moxon, Rooke, Dukes, Saundby, Edlefsen, Marcacci, Munn, Bull, Fürbringer, Kleudgen, Leroux, Capitan, de la Celle, de Chateaubourg, Coignard, Mahomed, Kinnicutt, Millard, Kalischer, Pavy, Stirling, Grainger Stewart, Lecorché, and Talamon.

After carefully surveying such literature there can remain no doubt in one's mind that an albuminuria may occur in the absence of organic changes affecting any of the tissues of the body.

The question, however, naturally suggests itself, Are we entitled to speak of a *physiological* albuminuria in the absolute sense of the term, and are the facts that have been brought forward in support of such a view admissible in all respects?

A short survey of the more important observations will, perhaps, not be out of place.

Posner (*Berliner klin. Woch.*, 1885) regards the elimination of minimal amounts of albumin as a normal condition, basing his view upon the examination of seventy cases—all being in perfect health—in most of which he claims to have demonstrated the presence of albumin; and Leube, v. Noorden, Duden, and Senator appear to endorse the albuminous nature of the substance obtained. Malfatti, on the other hand (*Inter. Centralblatt f. Physiol. und Pathol. der Harnorgane*, 1889), has thrown grave doubts upon the correctness of this view, his observations tending to show that the body obtained by Posner was not serum albumin at all, but mucin, referable to the mucous membrane of the urinary passages.

This supposed presence of serum albumin in every normal urine has been, and we may say is still, regarded by the advocates of a physiological albuminuria as one of the corner stones of their theory.

Senator thus reasons as follows: "Albumin must either be present in every urine, but in varying amounts, so that it may become impossible, if diminishing beyond a certain point, to detect its presence by any reagent now known to us on the one hand, or become apparent on the other again under conditions entirely physiological in their character; or, again, it may be altogether absent at times, but appear under such conditions," . . . among which he mentions muscular exercise, the process of digestion, cold baths, mental efforts, severe mental emotions, etc., and finally the process of menstruation.

Advocating the former view, he then goes on to show why it is that every normal urine should contain traces of albumin, as such must be contained in the morphological constituents of the primitive nubecula—viz., leucocytes, pavement epithelial cells, and cellular detritus. The force carried by such an argument, I must confess, seems rather feeble, however, as it would appear therefrom that any increase beyond that undeterminable minimal quantity of albumin would be referable to an increase in the morphological elements in the urine—in other words, to a pathological condition. In this connection the words of Lecorché and Talamon, which Senator rather points in the direction of their originators, "Un vice de raisonnement n'est pas plus admissible en médecine qu'en logique pure," would certainly appear as very applicable, unless, indeed, two sources existed for a physiological elimination of albumin—*i. e.*, unless the secretion of urine by the Malpighian tufts be regarded as a process of transudation—in which case, again, it would be difficult to conceive why in one case albumin should be demonstrable in the urine and in the other not; not to speak of such an occurrence as a paradox to all known laws of physiology.

At all events, so much is certain that the presence of albumin in every normal urine must yet be proved.

To pass over now to those cases in which albumin has definitely been demonstrated in the urine by methods which admit of no doubt, as those of Posner do, we there meet first in order with the observations made upon soldiers by Grainger Stewart, Leube, Capitan, Millard, and de Chateaubourg; the figures given by these observers as expressing the percentage of individuals in whom albumin could be demonstrated vary in a most striking manner, Grainger Stewart finding albumin in 37·5 per cent., Leube in 5 per cent., Capitan in 44 per cent., Millard in 44·9 per cent., de Chateaubourg in 76 per cent., it being claimed that all subjects examined were at the time in perfect health. Figures varying within so wide a range, however—*i. e.*, from five per cent. on the one hand to seventy-six per cent. on the other—are naturally very suggestive of some error of observation; a point which must even have struck Senator, strong advocate of the physiological theory though he is, for he himself attempts to reconcile so high a percentage as seventy-six with one of a lower order by suggesting that the high figures of de Chateaubourg may be due to an admixture of semen to the morning urine, which was used for observations. The same objection, however, may be urged against the remaining figures; but hat all the subjects examined should have passed urine ontaminated with semen would, on the other hand, appear ery doubtful.

There is one factor, however, which I think may be dvanced against the physiological school, namely, the uestion whether or not forced marches can be regarded s falling within the range of normal exercise. In this connection it may not be out of place to refer to the conusions reached by Zuntz and Schumburg (*Militärärztche Zeitung*, February, 1895), as a result of a series of investigations made at the order of the war department of Germany to determine the extreme degree to which soldiers could be burdened without detrimental effects. It was thus noted that with moderate loads not exceeding twenty-two kilogrammes, during fine weather, marches not exceeding twenty-five to twenty-eight kilometres were well borne, while on hot and sultry days a diminution in the vital capacity and considerable loss of water, a high pulse rate, as well as an increased frequency of respiration, could be noted.

With a load of twenty-seven kilogrammes, during fine weather, no abnormities were observed, while on hot days the disturbances already noted with a load not exceeding twenty-two kilogrammes, and which generally had disappeared by the next day, here persisted for at least twenty-four hours.

With a load of thirty-one kilogrammes, finally, even during cooler weather, distinctly pathological changes were observed, which diminished but slightly in intensity during subsequent training. Among the effects here noted may be mentioned an acute dilatation of the right heart, persisting for several hours, frequently associated with an enlargement of the liver; an increase of the temperature to 100° F. and even 103° to 104° F.; an increase in the specific gravity of the blood of 6·5 units; an increase in the number of red corpuscles of from one fifth to four fifths of a million per cubic millimetre, and of the white, amounting at times to nearly one hundred per cent.; a diminution of the vital capacity of five hundred cubic centimetres—*i. e.*, a sixth of the total capacity, etc.

In view of such results, forced marches among soldiers I think can hardly be regarded any longer as physiological exercise, and, as a matter of fact, the number of cases of albuminuria taken from subjects of more sedentary habits is remarkably smaller than the number of cases after forced marches, for example. Grainger Stewart thus gives ten per cent. as the normal number for cases of albuminuria belonging to the former class, his general average being 32·8 per cent. Deducting from his entire number of observations—viz., five hundred and five—the one hundred old men, *i. e.*, those beyond the age of sixty, there remain four hundred and five, among which albuminuria was observed in twenty-five per cent. This figure, for the reasons mentioned above, must, however, be still regarded as too high.

Among the remaining influences which have been demonstrated to act in a favorable manner toward the development of albuminuria in persons generally recognized as being in good health, there are mentioned cold baths, mental strain and worry, the process of menstruation, and, finally, the process of digestion.

To regard the cold baths as a physiological stimulus in every case, I can not possibly accept; that it may be so for the great majority of cases I have no doubt; but there certainly remains a not inconsiderable number of subjects upon whom cold in any form whatsoever can at any time be shown to act in a most unpleasant and abnormal manner, this being perhaps more especially the case with nervous individuals, and to regard the fact of a man's being a soldier as an absolute proof against the existence of any neurasthenic or hysterical condition seems on the whole more romantic than realistic. Observations of this order in general, where it becomes an impossibility to enter into the subject's individuality, as it were, after all a necessity, must certainly be accepted *cum magno grano salis* as indicating the true state of affairs.

In this connection the observations made by Thayer upon the effect of a cold bath upon the leucocytes in typhoid patients, as well as in normal individuals, appear of especial interest, and from these it would appear that a marked degree of leucocytosis followed in those cases in which an immediate reaction did not take place after the bath—*i. e.*, an exposure to about 70° F. lasting for only twenty minutes. Thus, taking normal Case No. II, the report reads as follows: "Leucocytes before bath, 3,250; after bath, 12,500; with the remark, bath from 12.01 to 12.23; at 12.25 ear cold and slightly blue; patient blue and shivering; at 12.40 the same condition is observed; leucocytes, 10,250."

Who, however, would regard such a state of affairs as normal, and the stimulus given as one only producing physiological effects?

Mental strain and severe emotions need not be considered at this place as physiological stimuli.

As far as the albuminuria of menstruation is concerned, the data to which we can refer in this connection are still too scanty to permit of any definite conclusions.

There finally remains to be considered what may be termed a digestive albuminuria, and the figures given in this connection by Grainger Stewart, who found albumin in 40·6 per cent. in soldiers after breakfast, as compared with 15·6 per cent. before breakfast, are certainly most suggestive. In children the variation, however, is not so great, the corresponding figures being 19·3 per cent. and 13·6 per cent.

In this connection I wish to refer to the observations of Da Costa, as well as my own, as possibly offering an explanation for the existence of this form of albuminuria, and as showing at the same time that a digestive albuminuria, at any rate, may be regarded as a truly pathological condition in a large number of cases, referable to some functional abnormity on the part of the body economy.

In the January number of the *American Journal of the Medical Sciences*, 1893, Da Costa, under the title The Albuminuria and Bright's Disease of Uric Acid and Oxalic Acid, describes a clinical picture which, when seen but a few times, is quite readily recognized again, and may be correctly diagnosticated, or at least strongly suspected, I believe, even in the absence of a previous urinary examination.

As the number of cases so far described is only a small one, it may not be out of place to give a brief clinical summary of some of the cases that have fallen under my observation since the publication of Da Costa's article.

Case I.—J. H., aged nineteen years, clerk, single. Patient has enjoyed uniformly good health up to March, 1893, when he began to complain of headaches, constipation, indigestion, and a high degree of subjective prostration. In April albumin was accidentally discovered in the urine. On examination, patient makes the impression of a very nervous individual, his eyes presenting the appearance so frequently observed in pronounced cases of neurasthenia. There was a marked degree of anæmia, a nervous, rapid, irregular pulse, without any increased tension whatsoever. Examination of thorax and abdomen proved entirely negative. The patient's musculature was well developed, the patellar reflex bilaterally considerably increased.

At that time the following note was made regarding the patient's urine: The urine is clear, of a moderate amber color, and an amphoteric reaction; the specific gravity is 1·036. A small amount of albumin can be demonstrated with the heat, nitric-acid, and trichloracetic-acid tests. Sugar absent. Indican test according to Jaffe, as modified by Stokvis, negative. After standing for about ten minutes after the addition of nitric acid a heavy sediment of urea nitrate crystals formed, thus indicating an amount of urea not less than fifty grammes to the litre. Uric acid greatly increased. The amount of water subnormal. Microscopically hyaline casts were found in moderate numbers; leucocytes in normal numbers; neutral calcium phosphate crystals were deposited in large numbers. The urine was then examined at least once a week, and the observation made that the morning and evening urine gradually became free from albumin, while this could still be demonstrated after a midday dinner.

Under the administration of a simple tonic, combined with a rigidly enforced diet (see later) and bicycle exercise, the patient's urine became perfectly free from albumin, and the digestive symptoms as well as the feeling of prostration disappeared. In August a transitory albuminuria followed a rather liberal indulgence in root beer and disappeared upon the withdrawal of this beverage. The patient now considers himself as perfectly well.

Case II.—O. H., Jr., aged thirty-two years. Engraving business; married. Patient declares that he has not known a sick day in his life, and has always been a very active worker. He comes complaining of a want of appetite, oppression after eating, flatulency, constipation, as also of a high degree of prostration.

On examination, patient makes the impression of a moderately nervous individual; patellar reflex increased: there is a slight degree of anæmia. Examination of heart and lungs entirely negative. The spleen is very readily palpable, its edge hard. Objectively nothing abnormal beyond the points mentioned. Examination of the patient's gastric juice reveals a normal degree of digestion and perhaps a slight degree of hyperacidity.

Examination of the blood negative. The urine is clear, of a dark amber color, normal in amount, and very acid; the specific gravity, 1·028; containing no sugar or indican; a trace of albumin with the three tests mentioned; urea and uric acid increased. Microscopically a small number of hyaline casts and a very large number of uric-acid crystals can be observed.

This patient was treated as Case I, and at the time of writing, having followed the diet indicated elsewhere ever since, without medicine, is not only doing well subjectively, but his urine at the same time is free from albumin.

Case III.—X., aged seventeen years, clerk, single. This case was examined by me for life insurance and refused by the company on account of the presence of a small amount of albumin. The patient had never been ill beyond having measles as a child, and offered, as usual in life insurance cases, no objective complaints at the time of examination. His eyes were, however, noted as markedly neurotic and the patellar reflexes increased.

His urine was clear, strongly acid, of high specific gravity, containing no sugar or indican; the uric acid was decidedly increased. Microscopically, a few hyaline casts were noted, and uric-acid crystals in abundance. The case could not be followed for other reasons.

Case IV.—H. B., aged thirty-five years, clerk, married. This patient was successfully operated upon for liver abscess by Dr. Tiffany, of Baltimore, several years ago, the development of the abscess having been preceded by a dysenteric condition of several months' standing. Two years ago he was married, and a year later began to present most pronounced symptoms of neurasthenia, complaining of various dyspeptic symptoms, intense nervousness, palpitations of the heart, which have led the patient to imagine himself a subject of heart disease, an ever-recurring fear of the same, and at times attacks of profound despondency and general prostration. On examination, patient makes the impression of a very nervous individual, with cold extremities, a feeble intermittent pulse, and increased reflexes. Examination of thorax and abdomen entirely negative. The urine is clear, light yellow, strongly acid, depositing a heavy sediment of uric-acid and oxalate-of-calcium crystals; specific gravity, 1·035. There is no sugar or indican. With the three tests mentioned a trace of albumin can be demonstrated. Microscopically, no casts, but a very large number of crystals of uric acid and oxalate of calcium. The uric acid is very much increased.

The albumin in this case, as in the others, disappeared entirely under the treatment indicated, a certain degree of nervousness and general lassitude, as well as an excess of uric acid, however, still persisting. Examination of the gastric juice negative.

Case V.—L. S., aged twenty-six years, architect, single. This patient has enjoyed comparatively good health all his life, with the exception of a certain degree of nervousness, which originated about the time of puberty. This increased materially toward the end of his student life, about three years ago, and has continued ever since. The most prominent symptoms in his case are a variable appetite, flatulency, constipation, belching, cardiac palpitations, a high degree of nervousness, with frequent attacks of profound despondency, and at times a mild degree of agoraphobia, as well as anthropophobia. The patient worries a great deal about his condition, and is morbidly introspective. On examination, there are observed a rapid intermittent pulse, cold hands, increased patellar reflexes, and neurotic eyes. The musculature is fair. Examination of thorax and abdomen is entirely negative.

The urine is clear, amber-colored, and strongly acid; the specific gravity, 1·034; there is no sugar or indican, but a trace of albumin. The uric acid is moderately increased. Microscopically there are no casts, but a very large number of crystals of uric acid and calcium oxalate, the latter especially.

Most of the subjective symptoms disappeared and the urine became free from albumin under the treatment indicated. Examination of the gastric juice negative.

Case VI.—C. W., aged forty-seven years, minister, single. Patient has been a most nervous individual throughout his entire life, addicted to excesses in eating, drinking, and mental work. A serious illness he has, however, never had. He comes complaining of insomnia, vertigo, various dyspeptic symptoms, general lassitude, asthenopia, and anthropophobia. The patient is morbidly introspective to the extreme, constantly doctoring; his bedroom is practically a drug shop.

On examination the patient is seen to be very corpulent, weighing about one hundred and eighty pounds; there is no anæmia; the pulse is good; does not make the impression of a neurasthenic on inspection. The patellar reflexes are enormously increased; "ankle-clonus" at times is most distinct, amounting, however, to but a small number of contractions at a time. Thoracic as well as abdominal examination negative.

The urine, which is of a moderate amber color, clear, very acid, and of a specific gravity of a 1·036, is absolutely loaded with uric acid. Albumin is present in small amount. There is no sugar or indican. Microscopically a few isolated hyaline casts, and enormous numbers of uric-acid crystals. The diagnosis of profound hysteria was made in his case. The patient, during the course of treatment prescribed—which, however, was not at all carried out, he living alone as a bachelor in a hotel—passed into a condition which might almost be described as lethargic, going to sleep as soon as seated in a chair, whether at home, at my office, or while visiting members of his congregation; into such a state he would even pass on the streets, going to sleep leaning against a house. His speech became drawling, ptosis most marked, locomotion uncertain, while the reflexes continued most active; the patient in general made the impression of one in the hypnotic state. While asleep in my office the strongest primary current of my apparatus was incapable of arousing him from his lethargic condition; at the same time the patient could readily be awakened by a question loudly spoken. He answered intelligently, as a rule, but would frequently enter into lengthy, entirely uncalled-for "orations." Judgment was decidedly impaired, and the patient at times extremely irascible. During this time—about ten days—the urine continued as described above. He was then placed in a hospital, where he recovered completely after one week under proper diet and rest. His urine became free from albumin, while the excessive elimination of uric acid continued. Since that time he has been able to follow his profession as minister of a highly intelligent congregation, still being hypochondriacal and eccentric, however.

Reviewing the histories of these cases, we are struck with the constancy with which nervous symptoms are met with of a type seen in what may be termed the hypochondriacal form of neurasthenia—viz., attacks of great mental depression, an almost constant attention to subjective impressions, fatigue on the least bodily or mental exertion, sleeplessness, vertigo, and in two of my cases at least decided anthropophobia and agoraphobia.

The dyspeptic symptoms manifested by such patients I am inclined to regard as entirely nervous in character. The gastric juice which was examined in three cases was normal, the hydrochloric acid being perhaps slightly increased. As Da Costa states, these dyspeptic symptoms are rarely absent, but have not been as pronounced in my own cases as the more general nervous symptoms.

The heart in all my cases was perfectly normal, both as regards extent of cardiac dullness, as also the character of the sounds; no evidence of increased arterial tension was met with. In short, beyond the existence of albumin in the urine, there was not a single symptom pointing toward the existence of organic renal disease. The various organs of the body, as far as could be ascertained, were free from organic disease. In this connection Case II may possibly be regarded in a doubtful manner on account of the existence of enlargement of the spleen. This condition, however, I am inclined to attribute to a chronic malarial intoxication contracted a few years ago in Texas, which passed practically unnoticed by the patient.

Most important, of course, from a diagnostic standpoint is the condition of the patient's urine, and I believe that from an examination of this alone the diagnosis can be made in most cases.

The daily amount, beyond a slight diminution at times, as well as the general character of the urine, present no special points of interest. Of great importance, however, is the almost constantly high degree of the specific gravity, varying between 1·023 and 1·036 in my cases, the higher figures being seen especially at a time antecedent to or during the early days of treatment. This high specific gravity I am inclined to attribute to the increased elimination of urea and other nitrogenous constituents, which may be constantly observed at a time when the patients have not as yet undergone active treatment, an observation which also stands in full accord with the almost constant loss of flesh. Most marked in this connection was Case I, in which the elimination of urea amounted to more than fifty grammes in the twenty-four hours.

In the pure cases of what I may term lithuric albuminuria the uric acid is constantly and very decidedly increased, while this is less marked in the oxaluric form, where the oxalic acid is also increased.

An increase in the elimination of uric acid should, however, never be inferred from a macroscopical or even a microscopical examination, and for accurate quantitative work Ludwig's method (see Neubauer and Vogel's *Urinary Analysis*), or that suggested by Haycraft (*ibid.*), should always be employed. Since the recognition of an increased elimination of uric acid would, however, become an impossibility for the general practitioner, had he to rely upon the two methods indicated alone, it may not be out of place to refer to a method which will enable every physician to decide in a few minutes whether he is dealing with a case of excessive, normal, or diminished elimination. In order to arrive at definite results, however, the specimen should be taken from the urine collected in the course of the twenty-four hours of the day. This method was originally devised for clinical purposes by Gubler, and has been in constant use at the Pitié and other hospitals of Paris ever since, being acknowledged as sufficient for all ordinary purposes by A. Robin (*Urologie clinique de la fièvre typhoïde*, Paris, 1877), an observation which my own experience tends to confirm. When working with this method the same quantity of urine and reagent should always be employed, when degrees of increase in the amount of uric acid may readily be determined.

To this end a small conical glass, holding about two ounces and a half, is filled to a certain mark, when concentrated nitric acid is allowed to carefully flow down the wall of the glass, forming a zone beneath the urine, until a second mark above the first is reached. The glass is then carefully set aside against a dark background, when in the course of time a fine whitish disc will appear in the uppermost zone of the urine, which has been well compared to a holy wafer by Robin. This zone is referable to uric acid, and in a normal urine should only appear after about five to ten minutes; if at the end of this time no disc is visible, the uric acid may be said to be present in diminished amount; should it occur earlier, an increase is indicated which may best be judged at the expiration of four minutes.

For those whose time will not even permit of the employment of so simple a method as that of Doremus, Gubler's clinical method may be of use in forming an idea of the amount of urea, being applicable, however, only for the purpose of detecting excessive amounts. When the nitric-acid test is carried out as described above for the approximative quantitative estimation of uric acid, the appearance of hoarfrost upon the walls of the vessel is thus only observed when more than twenty-five grammes of urea are present in the litre, while spangles of nitrate of urea require the presence of at least forty-five grammes, and a sediment indicates no less than fifty grammes.

The elimination of the chlorides here, as elsewhere, seems to go hand in hand with the amount of food ingested—in other words, with the appetite of the patient, never occurring in a markedly diminished amount, however, a point to which Da Costa himself has drawn attention, and one of importance in the diagnosis from chronic interstitial nephritis.

In this connection I also wish to insist upon the importance of obtaining an idea of the excretion of indican. As may be seen from my clinical reports, this was not increased in a single instance, contrasting very strongly with the results so far obtained in all cases of true renal disease, and standing in direct relation to the condition of the gastric juice—viz., indicating either a normal process of digestion, or hyperacidity, a relation to which I have recently drawn attention in the *American Journal of the Medical Sciences*, 1895.

For the detection of albumin in the urine, the heat and nitric-acid test may be sufficient in most cases, particularly if such have not undergone active treatment before. It is my habit, however, to employ the trichloracetic acid for the purpose of demonstrating the presence of albumin in all cases, a method the value of which has been definitely demonstrated in this country by the late D. Meredith Reese, of the Johns Hopkins Hospital (*Bulletin*, vol. i). In this manner doubts can never arise as to the presence of true serum albumin, the ring obtained, when the test is made according to Heller's method, being sharp and definite against a dark background.

Reese originally made use of a saturated solution of trichloracetic acid. I have found, however, that such a concentration is by no means necessary, and personally have employed a solution containing but sixteen grammes dissolved in a hundred cubic centimetres of water.

During the course of treatment the employment of this reagent will, at the same time, enable the physician to definitely state whether or not the albumin has actually disappeared. Since Reese referred to the fact that tube casts of a hyaline character might occur in urines which were apparently free from albumin when tested with the usual reagents, and in which its presence could be demonstrated, nevertheless, by means of the trichloracetic acid, I have had abundant opportunities to fully confirm these observations, and I may say at this place that, after several thousand individual examinations with this reagent, I have still to see the first case of cylindruria sine albuminuria. The fear of demonstrating albumin in every urine (!) with too delicate a reagent can not enter into consideration in connection with the trichloracetic acid.

The amount of albumin present in these cases varies a great deal, but I may say never exceeds two grammes in the twenty-four hours. Albumoses and the peptone of Kuehne I have never been able to demonstrate, the albumin present being serum albumin, mixed at times with minimal traces of serum globulin.

In several cases which came to my notice during the last year I was also unable to demonstrate the presence of nucleoalbumin, which according to some is said to occur in recognizable amounts in every urine, and I may say in this connection that a nucleoalbuminuria, according to my experience, is comparatively rare, an observation which is borne out by the results reached by Sarzin in Senator's laboratory.

Tube casts are present in most, and perhaps in all cases, at times at least, and should be sought for with a low power only. They are hyaline or finely granular; other casts I have never seen in these cases. Leucocytes are present in normal or perhaps slightly increased numbers.

Among other constituents of the sediment there must, of course, be mentioned crystals of uric acid, occurring either alone or together with crystals of calcium oxalate.

These latter may also occur alone, and are frequently seen in truly enormous numbers.

In one case, No. 1 of my series, the sediment consisted largely of crystals of the neutral phosphate of calcium—$CaHPO_4+2H_2O$.

The diagnosis of this form of albuminuria, I believe, can generally be made without much difficulty, the salient symptoms being those referable to the nervous system, as described above, the absence of cardiac mischief, and it seems to me an absence of increased arterial tension; furthermore, the dyspeptic symptoms in the presence of normal digestive processes, and finally the condition of the urine—viz., a high specific gravity, a fairly normal amount of water, an increased amount of urea, of uric acid, and often of oxalic acid, a normal or increased amount of chlorides, the absence of indican, according to the Jaffe-Stokvis test, the presence of albumin, not exceeding two grammes in the twenty-four hours, combined with the occurrence of a small number of hyaline or very finely granular casts. The rapid response to treatment, finally, should be mentioned among the characteristics of the disease.

Our knowledge of this particular form of albuminuria is as yet too limited to warrant the drawing of any definite conclusions as to its ultimate origin.

To regard an excessive elimination of uric acid or of oxalic acid in itself as the direct cause of the albuminuria—in other words, to speak of a direct irritative action of these bodies upon the kidneys—does not appear justifiable. It seems, on the other hand, that the strain thrown upon the kidneys by an excessive elimination of nitrogenous constituents in general must be held responsible for this particular form of albuminuria, a strain which, remembering the absence of a corresponding polyuria, must be enormous.

It will hence be well to regard this form of albuminuria as being referable to a general metabolic insufficiency on the part of the body economy, characterized by an increased nitrogenous waste on the one hand and insufficient combustion on the other, resulting in an excessive formation of uric acid, and at times of oxalic acid.

In the light of such cases it seems very doubtful whether we are entitled to speak of the existence of a purely physiological form of albuminuria, and a repetition of the work done in this direction, in which the possible causative factors observed in my own cases are taken into careful consideration, is certainly very desirable.

It would probably also be more conservative to comprise the various forms of so-called physiological albuminuria under the general heading of functional albuminuria. The term "albuminuria and Bright's disease of uric acid and of oxalic acid" should similarly be discarded, as suggesting an origin of the albuminuria as yet unproved, and if any term shall be applied to this particular form at all I should propose to name the same, until further light is thrown upon it, after its discoverer, the albuminuria of Da Costa.

The prognosis of this disease is, of course, a matter of great importance to the individual afflicted. That chronic interstitial nephritis can result ultimately could be *a priori* expected, and a case in point has been described by Da Costa himself—Case VII of his series. That the disease can exist for years the cases published seem to demonstrate, as also the fact that under proper treatment, especially if the disease has not existed for many years already, recovery takes place invariably.

To the life-insurance physician these cases must be of unusual interest, involving in the first place the question as to the candidate's admissibility; and, secondly, the fact that a single negative examination of the urine would by no means guarantee an absence of the disease, the general symptoms in themselves probably not being sufficient to warrant the rejection of the applicant. All of my cases, I am sure, would be unconditionally accepted by the various examining physicians, and it may be stated in passing that three have since been accepted, their urine no longer indicating the previous existence of the disease, and a disease, moreover, which its bearer himself would probably never regard in the sense of a disease. Without a knowledge of the previous existence of albuminuria, a point which it may not always be wise to disclose to the patient, the life-insurance physician would certainly be at a great disadvantage. For such cases, where the general history and symptoms would awaken suspicion, but where the examination of the patient himself, as also of his urine, shows no abnormities beyond a specific gravity approaching the upper limit accepted by such companies, and the presence of numerous uric-acid or of oxalic-acid crystals in the sediment perhaps, a definite conclusion could be reached by instructing the candidate to indulge liberally in red meats and carbohydrates for a period varying between one and four weeks, at the expiration of which time the urine should be again examined, when a trace of albumin, recognizable even by the coarser tests, will probably always be demonstrable, unless, indeed, the patient has undergone active treatment extending over a period of several months at least, when he may really be regarded as well, and unconditionally accepted.

The excessive elimination of uric acid and of oxalic acid in itself may, of course, become a source of anxiety, favoring, as it does, the development of renal and vesical calculi, and in Case V attacks of renal colic had occurred.

The treatment of this disorder is very successful on the whole, and entirely so as far as the albuminuria is concerned, while the general symptoms, as well as the lithuria and oxaluria on the other hand, may resist treatment for a long time.

Most important, of course, is the administration of a diet, rigidly enforced, and calculated to throw as little work as possible upon the kidneys, at the same time combating excessive formation of uric acid and oxalic acid. To this end I order a diet the staple article of which is milk, or still better kefir, as without these I have unexceptionally met with the complaint of increasing weakness and prostration. Of milk the patient should take from two to three pints in the twenty-four hours, while of kefir one to two pints are sufficient, particularly if an additional pint of milk can be taken. Nourishment should be given five times daily.

A general idea may be formed very readily of the amount of nitrogenous food consumed by a patient by means of an ordinary urea estimation made once in ten to fourteen days, and an increase or decrease ordered, according to the requirements of the case.

Of meats I allow the so-called white meats only—*i. e.*, fish, the white meat of chicken, turkey, and birds, sweetbread, calf's brain, crabs, oysters, frogs, and rabbits. Red meats proper are strictly interdicted.

Of vegetables again I allow spinach, oyster plant, parsnips, turnips, carrots, Brussels sprouts, white asparagus, etc., and of fruits only stewed apples, prunes, pears, and peaches.

Coffee and tea are interdicted, and alcohol as a general rule also, unless the degree of prostration is very great, when a pint of good French red wine, such as Pontet Canet, St. Estèphe, St. Julien, Médoc, etc., may be given during the day, at meal times.

Stale bread, *Zwieback*, toast, aleuronat* bread are permissible, particularly the latter.

As regards baths, the Turkish bath of ten minutes' duration, followed by a short process of shampooing, the needle bath, and at least thirty to forty minutes of rest, once a week, and one ordinary warm full bath before retiring two to three times a week, followed by coarse friction, seem to be especially serviceable. From cold baths I have only seen deleterious effects. If anæmia exists, warm sea-water baths, which may be well taken at home, are of benefit.

Eight to ten hours of undisturbed sleep should be had, if at all possible, and exercise should be taken daily, gradually increasing as the degree of prostration diminishes, in country and not in city air, for which purpose a ride on horseback or on the bicycle once daily seems to be the most effective.

As regards medication, finally, very little or nothing at all is called for; anæmia should, of course, be treated, preferably by means of iron and quinine; while fifteen-drop doses, three times daily, of the tincture of nux vomica, gradually increasing to the high doses employed by Osler—*i. e.*, twenty to thirty drops—may be given in other cases. Of mineral waters I instruct my patients to consume liberal amounts—the Otterburn, Buffalo, and Londonderry lithia waters appearing to be of decided benefit in these cases; in their absence, however, distilled water to which a pinch of salt has been added may be used.

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* The aleuronat flour may be obtained from Messrs. Lehmann & Glaser, 412 E. Lombard Street, Baltimore, Md.

A CONSIDERATION OF SOME OF
THE MORE IMPORTANT PRINCIPLES OF INTRANASAL SURGERY.*

By W. K. SIMPSON, M. D.

The great advancements toward perfection in the treatment of morbid conditions belonging to the different specialties seem to me to depend on the extent to which surgical means or principles can be called into play, or, in other words, the closer we can apply surgical principles to morbid conditions so much the more shall we meet with success in combating those conditions.

I think that the surgery of the present day, with all its great detail of antisepsis, certainly marks the nearest approach we have to exactness in medical science.

This is emphasized not only by the great results in treatment, but also by the great strides made in exploratory surgery. We can almost say that the successful history of any of the various specialties is a *history of their surgery.*

Surgery marks in many instances the *limits* to which successful treatment can be carried out, and the proper and *conservative* knowledge of the surgical possibilities of any region becomes our corner stone in applying the principles of the healing art.

I can not leave this brief preface without emphasizing the term *conservative* surgery, as it has its bearings on *intranasal* surgery as well as on surgery in general.

True or conservative surgery, in short, may be defined as knowing when *not* to interfere. Though short in definition it comprehends a great deal. Its true interpretation comes from years of experience; it means a thorough anatomical knowledge of the region under consideration, the accidents and dangers which may befall us, but above all it should teach us to know exactly what condition we are to substitute for the morbid action we try to correct. Shall we benefit our patient? That should be our watchword.

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* Read before the American Laryngological Association at its seventeenth annual congress.

It is not the fault of the physician that he is confronted with diseased conditions to treat; but it is the fault of the physician if he substitutes a worse condition than he finds in the first place, or unduly subjects his patient to accidents and dangers without any chance of bringing about an improvement or cure. Without enlarging on this point I sometimes think that sufficient consideration is not given to this question. It should be our duty to know how much relielf we can expect by interfering, and only in a matter of immediate life or death should we subject our patients to grave chances.

I speak in this manner because, recognizing the greater benefits of intranasal surgery, we can not but admit that there is always the danger of the pendulum swinging *too far*, of our being impelled by overzeal or ignorance, thus bringing discredit on measures which, if properly considered, would ever remain of inestimable value. It is well to call a halt at times and see what we are doing, whether we are not doing too much; to call a halt and look over our table of mistakes and be guided by them. The mistakes of a fair minded man should become his landmarks. Each of us, however successful we may be, has his full measure, and it is only by giving them their true value that we shall ever institute a safe method for future procedure.

In speaking of intranasal surgery I shall confine my remarks more particularly to treatment directed to obstructive or hypertrophic rhinitis, omitting the consideration of marked deformities or the major conditions of cancer, either originating in the nose or spreading there from adjacent structures; the relief of these latter conditions, I believe, belongs to the domain of the general surgeon, who can call into play his more extensive methods and technique.

Perhaps there is no organ in the body which has undergone such radical changes in treatment from the old-time methods as the nose. We might say that the whole subject of intranasal treatment has been revolutionized, and intranasal surgery has become a science unto itself, and there have been brought about relief and cures which stand in bold contrast to previous methods. True, as in all other regions, there has unquestionably been too much zeal on the part of some which has occasioned more or less skepticism, but that is not the fault of the principle but rather of the individual.

Notwithstanding the fact that the interior of the nose must take its chances of repair like all regions when surgically interfered with, and must at times undergo severe inflammatory reaction in its fullest sense, it has often been a matter of some wonder to notice the comparative immunity from severe results after surgical operations of more or less magnitude; and in looking for a solution of the problem I can not but attribute it in part to the natural protective physiology of the organ. Aside from its olfactory and respiratory functions, the nose is a *great filter*, more so, perhaps, than almost any other organ in the body; it is being constantly subjected to odors, germs, microbes, foul air, dust, changes of temperature, errors of overcrowding and errors of diet, and is constantly standing between them and their pernicious effects on the economy. So no wonder that when the organ is subjected to a limited amount of destruction of its tissue it can still retain its power of protective resistance to outside influences and allow repair to go on with but little reaction.

In fact, carrying this thought a little further, in the matter of the ætiology of intranasal diseases it is this very overdoing and overstimulation of the natural physiological function of the nose that brings about many of its diseases. Markedly so are we compelled to notice this in beginning our first study of intranasal changes as they originate in children. With their successive exacerbations of coryza attacks from whatever cause, their sensitive, tender, and yielding turbinated bodies become less and less able to resist the increased demand put upon them, and they assume more and more a condition of chronic enlargement, with the almost certain added effects of stenosis, increase, retention, and absorption of secretion, and changes of intranasal contour from the effects of long-continued friction pressure on the floor of the nose and on the sæptum. With the exception of atrophic rhinitis (which is considered by some to be only secondary to hypertrophic), the great array of intranasal diseases with which we are confronted are hypertrophic or obstructive in their nature, and when this condition becomes chronic, with an extra amount of connective tissue and a corresponding loss of physiological reaction, we have at once in this changed condition its own remedial suggestion—namely, mechanical reduction or removal, or, in other words, *surgery*.

Notwithstanding the resultant surgical conditions I have endeavored to emphasize, there undoubtedly exists a pre-surgical period, or, more properly speaking, a pre-operative period in the treatment of intranasal diseases before permanent changes have taken place, which conditions may be overcome, all or in part, by change of climate or occupation, regulation of diet or clothing, or a general change of environment suitable to the individual patient. But as rhinologists we are perhaps most frequently consulted as this condition is merging into the more permanent one, or after the permanent changes have taken place, and I consider it one of the most important and delicate points as to operative interference at this period of transition.

A similar analogous important point arises again later in life, when we are confronted with intranasal hypertrophies and deformities in conjunction with beginning or more advanced atrophic changes incident to age or disease. Too great care can not be exercised in these mixed conditions lest in our operative procedures we convert the whole area into a state of atrophic rhinitis, which may be more deleterious than the condition we attempted to remedy.

In determining on the necessity of an operation we should not forget the fact that a perfectly symmetrical nasal interior is but rarely encountered, and we should consider well and be guided by the relations that these irregularities bear to the subjective symptoms presented in the individual case, well knowing that there is a personal equation which will permit one individual to carry well-marked intranasal deformities without any inconvenience, while the same or a less-marked deformity in another individual will undoubtedly call for surgical relief.

Choice of Operation.—With a careful adjustment of the relation of symptoms, the character and position of the tissue involved, and the extent of the mechanical pressure, the choice of the particular mode of operation reduces itself to a comparative simplicity and becomes a matter of individual familiarity or expertness, a due consideration of which would carry us too far into the discussion of the respective merits of the snare, cautery, saw, knife, trephine, chemical acids, or other surgical means. In general, however, we may say that means should be chosen which, with the least shock to the patient, will remove the condition most thoroughly by making the smoothest wound, destroying the least amount of mucous membrane, both immediate and adjacent, consistent with a thorough removal, producing the least amount of hæmorrhage, offering the least chances for infection, and which, when thoroughly repaired, will present the best possible normal secreting mucous-membrane surface, or, reduced to a word, that procedure is best which, when repair is completed, removes the deformity and restores the mucous membrane to its nearest normal condition. All operations should have this end in view.

Leaving the consideration of the necessity and choice of operation, the next thing which naturally confronts us is the immediate and after care of the operative wound, and this may be summed up in the one term *antisepsis.* No matter how grave or insignificant may appear our operation, a due attention to antisepsis is absolutely necessary; a very minor operation without this attention may be converted into something more serious to the patient.

It is a very easy thing for those not constantly operating in major surgery to become very lax in the application of antisepsis to minor work. If anything is to be encouraged it is an "antiseptic habit."

Our instruments should be thoroughly sterilized before the operation and should be antiseptically cleansed as often as possible during the operation. No instrument not surgically clean should be inserted in the nose during an operation or in the process of its after-treatment. Especially is this important as regards our hands, or more particularly the thumb and forefinger of our left hand, which we are *constantly* using in fashioning the cotton on our cotton applicators. I am positive that lack of attention to this point is a common means of introducing germs within the nose. This cautionary point applies not only to performance of operations, but to the daily routine work in our offices; one only has to notice the change in color of the pure white absorbent cotton after it has been rolled between fingers which are not clean to at once perceive the importance of this precaution.

The nose differs somewhat from other regions as to the application of aseptic principles in that it can not easily be made a closed cavity, thus shutting out all entrance to bacteria. With the anterior nares plugged with antiseptic dressings, the posterior nares, through the avenue of the mouth, are still open, and the plugging of both anterior and posterior nares becomes difficult to endure if too long continued; and again, only in certain cases does the interior of the nose tolerate well the pressure of dressings. Their frequent removal and readjustment, which is absolutely necessary when used, may be the means of starting up unnecessary hæmorrhage and irritation to the wound. Unless *pressure* is indicated as a portion of the treatment, the dressings should be placed in the nose lightly, whatever their nature.

Another danger of too much and too long-continued pressure by means of dressings is abrasion of opposing mucous membrane, thus setting up the danger of adhesions or a general narrowing of the intranasal space. This *after*-narrowing is very frequently seen along the floor of the nose joining the base of the sæptum, and especially is it often noticed as an annular narrowing at the entrance of the nose. I may also say that this common after-result is not only the result of too much pressure by dressings, but is also brought about by the *wounding* of the floor of the nose during the operation. Another danger common to intranasal dressings is the increase, retention, and absorption of the secretions. While I believe in lightly applied *protective* dressings, especially at the entrance, I think we have a better means of applying the principle of antisepsis by frequent cleansing and drainage. The nose offers an ideal example for the carrying out of these means, and, when gently and carefully employed, they bring about all that is necessary.

A simple kind of wound treatment may be accomplished by beginning, first, with gently spraying a weak solution of cocaine, a half of one per cent., both as an anodyne and for the reduction of swelling, then using a diluted solution of hydrogen peroxide, to be followed with any of the more common alkaline and antiseptic solutions; this is repeated at a sitting as often as is necessary, the patient aiding by the frequent blowing of the nose and by the surgeon in removing pieces of shreds and sloughs by the forceps or cotton applicator; then, as a final application, the nose may be insufflated with some good adhesive antiseptic powder, of which there are a number from which to choose; but one of the best in my hands is the *stearate of zinc* with iodoform; this is made aromatic and does not offend in odor as much as the pure iodoform, and it has excellent adhesive qualities.

One can often see the benefit and relief of this mode of cleansing the nose, especially after a patient returns to us in a day or so after the operation, with the history of having been confined to the bed with an attack of the "grippe," or of "having taken a heavy cold," with that of headache, general boneache, myalgia, rise of temperature, and occluded nose; it is very convenient to allow it to be called the "grippe," but in reality it is *sepsis*, and will often be dispelled by a good, thorough cleansing of the above description.

In conclusion, I can only say that the morbid conditions of the nose for the relief of which surgical measures are to be invoked require a great deal of nicety of judgment and discrimination, alike as to the *necessity* of the operation, the *choice* of the operation, the season of operating, and the immediate and subsequent care. These principles, when duly and carefully considered, will place in our hands measures for relief which could not be attained by other means, and will serve to strengthen confidence and lessen skepticism.

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POST-GRADUATE TEACHING IN BELLEVUE HOSPITAL.

In this number of the *Journal* we print an announcement to the effect that, at the request of the Commissioners of Public Charities and Correction, the physicians and surgeons constituting what is known as the fourth division of the staff of Bellevue Hospital have undertaken the work of post-graduate teaching in that institution. For the information of those of our readers who may not be familiar with the constitution of the medical staff, we may state that it consists of four divisions. One of these is composed of appointees nominated by the faculty of the College of Physicians and Surgeons (the Columbia College School of Medicine); another, of those nominated by the faculty of the Medical Department of the University of the City of New York; another, of those nominated by the faculty of Bellevue Hospital Medical College; and the fourth, of gentlemen not nominated by any college faculty, but supposed to represent the medical profession at large. For several years this has been the basis on which appointments have been made on the staff, and it has given satisfaction to everybody concerned. The gentlemen of the fourth division—some of them and to some extent—have given clinical instruction, but practically the teaching resources of the hospital have been wasted, so far as the fourth division has been concerned.

This waste, we may confidently expect, will now be remedied. We understand that the action of the commissioners in this matter has been spontaneous, and we can impute it only to a praiseworthy purpose, that of turning the city institutions to the best account. It is much to their credit that they recognize the importance of medical teaching in a hospital's work. In this recognition they are not at all behind the governing bodies of the great endowed hospitals. From what information we have we judge that the gentlemen of the fourth division of the staff will enter upon their new duties zealously, with a loyal determination to carry out the spirit of the commissioners' enterprise to the fullest extent. They also are to be commended no less than the commissioners. Among them there are many men who are admirably qualified, both by natural gifts and by experience, for such teaching as the plan is intended to furnish, and we look to see their work as teachers take a prominent place in the post-graduate instruction available in New York, admirable as it already is. Bellevue Hospital has for years been renowned as a teaching institution, and by this new move its efficiency and its fame will unquestionably be materially heightened.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The annual meeting held in Detroit last week was very satisfactory. It was not so largely attended as some former meetings; at least the registration was not so great. The attendance was sufficient, however, to make the sessions spirited. Most of the papers that had been announced on the programme were actually read, and the subjects with which they dealt were adequately discussed. With hardly an exception, the papers were of good quality; more than a score of them, indeed, out of a total number somewhat in excess of a hundred, were of conspicuous merit. The address in surgery, by Dr. Theodore A. McGraw, of Detroit, on the Present State of our Knowledge of Cancers and Tumors, and the address entitled Daniel Drake, or Then and Now, by Dr. William Pepper, of Philadelphia, were both of rare excellence. Dr. Pepper was very happy in his choice of a theme, for Drake's influence on the American medicine of the second quarter of the century was in danger of falling into oblivion, so little heed do we pay to the past work of members of our profession, unless it is marked by some brilliant discovery, like that of anæsthesia, or some bold operation, like ovariotomy. It was peculiarly fitting that the author of a classical work on the diseases of the Mississippi Valley should be honored at a meeting of this association.

The length of the programme seemed to make it advisable to divide the meeting into sections, and unfortunately the places of meeting were so far apart as to detract somewhat from the impressiveness of the proceedings. The opinion was freely expressed, in consequence, that in the case of meetings yet to come it would be better to curtail the programme and forego any advantages that have been supposed to attend a division of labor. In this opinion we decidedly concur. The Mississippi Valley Medical Association is preeminently a society of general practitioners, and all the members who attend the meetings are interested in every branch of medicine and surgery. We think they would profit by a smaller number of papers presented before a solid meeting. The next meeting, to be held in St. Paul, will occur somewhat later in the season, and with that advantage will probably be more largely attended. It must be said, however, that the visiting members found Detroit delightful and their resident brethren assiduous in ministering to their comfort.

MINOR PARAGRAPHS.

THE CONCLUSION OF THE *INDEX-CATALOGUE.*

The concluding volume, the last of sixteen portly volumes, of the *Index-Catalogue of the Library of the Surgeon-General's Office, United States Army* has just reached us. Thus the first series of the *Index-Catalogue* is finished, and the series stands as a monument to the liberality of the government and to the accuracy and industry of Deputy Surgeon-General John S. Billings. Dr. Billings says that it is probably the last volume that will be issued under his personal supervision, but we may add that to him, nevertheless, will be due a large share of the honor that we expect to be accorded on account of subsequent series. We heartily congratulate Dr. Billings on having reached this resting place.

HOUR-GLASS STOMACH.

In a recent number of the *Archiv für pathologische Anatomie und Physiologie und für klinische Medicin* there is an account by Dr. Saake of a case in which, on post-mortem examination, the stomach was found to be divided into two compartments of about the same size. The formation appeared to be congenital and to have been brought about by a peculiar course and grouping of muscular fasciculi radiating from the œsophagus. A carcinoma of the pyloric portion had been the cause of death.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 10, 1895:

DISEASES.	Week ending Sept. 3.		Week ending Sept. 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	21	3	41	9
Scarlet fever	17	3	20	2
Cerebro-spinal meningitis	3	2	3	3
Measles	80	5	66	11
Diphtheria	126	21	158	27
Small-pox	0	0	0	0
Tuberculosis	—	—	57	85

The Chief of the "Chutmucks."—Dr. Isaac N. Love, of St. Louis, is recognized as the chief of a semi-organized social coterie known as the "Chutmucks." Among his peculiarities has heretofore been that of not carrying a watch; to use his own words, he would not be "a slave to time." Time has been called on him, however, and he now carries a watch that was given to him in Detroit last week, during the meeting of the Mississippi Valley Medical Association. Among other inscriptions, the watch bears this: "To the Chief of the Chutmucks, from his Loyal Braves." On the occasion of the presentation speeches were made by Dr. Charles A. L. Reed, of Cincinnati, and Mr. William J. Evans, of New York. Mr. Evans is reported in the *Detroit Free Press* as having said:

"Those who do not know, and do not know that they do not know, these are fools; leave them. Those who do not know and know that they do not know, these are children; teach them. Those who know and do not know that they know, these are asleep; arouse them. Those who know, and know that they know, these are wise; follow them. To-night, gentlemen, we are assembled to honor one who knows, one who makes men friends and women sweethearts; one who is the daily mirror of a broad fraternal love, a man who, having crossed the ocean with unequaled gifts as a gentleman, a scholar, and a Chutmuck, saw, heard, and felt those things which go to make the plenitude of men on foreign shores, and, after writing on their maps the word 'inadequate,' has returned to those who love the common ground on which he helps them stand; and with him here

"We now can think, and think aright;
We now can see with mental sight
That love strives ever to become
Of plenitude in man the sum."

The Litchfield County (Connecticut) Medical Association will hold its next annual meeting in Litchfield on Tuesday, October 8th, under the presidency of Dr. Frederick Holme Wiggin. Papers are expected to be read by Dr. J. W. S. Gouley and Dr. Charles Phelps, of New York, Dr. J. C. Kendall, of Norfolk, and Dr. Charles Page, of Litchfield.

The Index Medicus.—The following is a list of subscriptions received by Dr. Billings from August 24th to September 6th:

Albany, N. Y.—Dr. Samuel B. Ward.

Brattleboro, Vt.—Dr. Henry D. Holden.

Cleveland, Ohio.—Cleveland Medical Library, Dr. Dudley P. Allen, Dr. Henry K. Cushing.

Edinburgh, Scotland.—Mr. Young J. Pentland, publisher.

Lille, France.—Bibliothèque universitaire.

Paris, France.—Dr. Charles Richet.

New York City.—New York Academy of Medicine, Dr. George T. Elliot, Dr. Willy Meyer.

Philadelphia, Pa.—Dr. W. W. Keen, Dr. J. William White, Library of the Pennsylvania Hospital, Dr. W. B. Van Lennep, Captain V. Vischer.

St. Paul, Minn.—Dr. C. A. Wheaton.

Dr. George Thomas Jackson, of New York, informs us that he has obtained subscriptions from Dr. F. Peterson, Dr. R. W. Taylor, and Dr. L. D. Bulkley.

The Mississippi Valley Medical Association.—At the annual meeting, held in Detroit last week, officers for the ensuing year were elected as follows: President, Dr. H. O. Walker, of Detroit; vice-presidents, Dr. B. Merrill Ricketts, of Cincinnati, and Dr. Frederick C. Woodburn, of Indianapolis; secretary, Dr. Hanan W. Loeb, of St. Louis; treasurer, Dr. Harold N. Moyer, of Chicago. It was voted to hold the next meeting in St. Paul.

Changes of Address.—Dr. Gustavus Blech, to No. 203 East Columbia Street, Detroit; Dr. Hugo Engel, to No. 2016 Arch Street, Philadelphia; Dr. Charles F. J. Kennedy, to No. 70 Main Street, Springfield, Mass.; Dr. John A. McCreery, to No. 20 East Fifty-fourth Street, New York.

The Jefferson Medical College of Philadelphia.—We are informed that the chair of pathology is vacant.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 31, 1895:*

Gardner, J. E., Surgeon. Ordered to temporary duty as a member of the board at the Naval Academy. September 5, 1895.

Cordeiro, F. J. B., Passed Assistant Surgeon. Ordered to temporary duty as a member of the medical board at the Naval Academy. September 5, 1895.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Sixteen days ending August 31, 1895:*

Vansant, John, Surgeon. Granted leave of absence for thirty days. August 24, 1895.

Hutton, W. H. H., Surgeon. Detailed as chairman of board for physical examination of officer of Revenue-Cutter Service. August 22, 1895.

Irwin, Fairfax, Surgeon. Detailed as chairman of board for physical examination of candidate for Revenue-Cutter Service. August 30, 1895.

Banks, C. E., Passed Assistant Surgeon. Detailed as member of board for physical examination of candidate for Revenue-Cutter Service. August 30, 1895.

Young, G. B., Passed Assistant Surgeon. Upon expiration of leave of absence to report at bureau for temporary duty in laboratory. August 28, 1895.

Brown, B. W., Passed Assistant Surgeon. Detailed as recorder of board for physical examination of candidate for Revenue-Cutter Service. August 30, 1895.

Sprague, E. K. Detailed as recorder of board for physical examination of officer of Revenue-Cutter Service. August 22, 1895.

Greene, J. B., Assistant Surgeon. To proceed from Washington, D. C., to Wilmington, N. C., for temporary duty. August 22, 1895.

Society Meetings for the Coming Week:

Monday, *September 16th:* New York Academy of Medicine (Section in Ophthalmology and Otology); Cleveland Society of the Medical Sciences; Hartford, Conn., Medical Society; Chicago Medical Society.

Tuesday, *September 17th:* American Dermatological Association (first day—Montreal); American Orthopædic Association (first day—Chicago); New York Academy of Medicine (Section in General Medicine); College of Physicians of Philadelphia (Section in Ophthalmology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Kings, N. Y.; Baltimore Academy of Medicine; Connecticut River Valley Medical Association (Bellows Falls), Vt.

Wednesday, *September 18th:* American Dermatological Association (second day); American Orthopædic Association (second day); Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine.

Thursday, *September 19th:* Medical Society of the Missouri Valley (Council Bluffs, Ia.); American Dermatological Association (third day); American Orthopædic Association (third day); New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *September 20th:* New York Academy of Medicine (Section in Orthopædic Surgery); Brooklyn Medical Society; Baltimore Clinical Society; Chicago Gynæcological Society.

Saturday, *September 21st:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Births, Marriages, and Deaths.

Born.

Foster.—In New York, on Tuesday, September 10th, to Dr. and Mrs. Matthias Lanckton Foster, a son.

Married.

Burrough—Mitchell.—In Brunswick, Me., on Wednesday, September 4th, Mr. Horace Burrough, Jr., of Baltimore, and Miss Elizabeth Mitchell, daughter of Dr. Alfred Mitchell, of Brunswick.

Scudder—Seelye.—In Northampton, Mass., on Thursday, September 5th, Dr. C. L. Scudder, of Boston, and Miss Abigail T. Seelye, daughter of Dr. L. Clark Seelye, president of Amherst College.

Died.

Beck.—In Superior, Wisconsin, on Monday, September 2d, Dr. Charles S. Beck, Jr.

Burts.—In Fort Worth, Texas, on Thursday, September 5th, Dr. William P. Burts, aged sixty-nine years.

Cable.—In Pittsburgh, Pa., on Tuesday, August 27th, Dr. W. W. Cable, aged seventy years.

Jewett.—In Northborough, Mass., on Friday, August 23d, Dr. Henry A. Jewett, aged seventy-five years.

Layman.—In Schoharie, N. Y., on Thursday, September 5th, Dr. William S. Layman, aged sixty-four years.

Parrish.—In Southampton, N. Y., on Wednesday, September 4th, Mrs. Sarah Redwood Parrish, widow of Dr. Isaac Parrish, of Philadelphia, in her eighty-first year.

Scott.—In San Diego, Cal., on Thursday, August 29th, Dr. Edward A. Scott, of New York.

Letters to the Editor.

THE EYE IN ITS RELATION TO HEALTH.

Chicago, *August 24, 1895.*

To the Editor of the New York Medical Journal:

Sir: Believing that it is not your intention to give expression to prejudices where facts are available, I offer the following concerning the character of your review of *The Eye in its Relation to Health:* In your review there is one misstatement and others that are somewhat misleading. It says: "The author professes to have cured (a long list of diseases) by artificially creating myopia and by making binocular single vision impossible." In fogging or applying a plus glass that somewhat lessens the acuity of vision, the natural stimulus of the eye for a more perfect vision causes the ciliary muscle to relax its strain. In other words, there is a stimulus to repress the excessive ciliary nerve impulse that keeps up the contraction of the ciliary muscle which is the real constituent of the latent hyperopia (*The Eye in its Relation to Health*, pages 141 and 142, also 155 to 164). This fogging stimulates myopia physically, but vitally or physiologically it produces exactly the reverse conditions to myopia. In myopia (page 143) there is a constantly increasing ciliary spasm, whereas fogging induces a constantly relaxing condition of this spasm. In fact, fogging reduces myopia. This refers to that part of myopia which is refractive. A few experiments of fogging at the near point (pages 149 to 151) will convince any careful operator that refractive myopia is radically reduced by the fogging process. But recently Dr. Edmund T. Allen, of the Marshall Field Building, Chicago, observed a case where the vision without glasses at twenty feet was $\frac{20}{160}$ before fogging was begun. After this patient had read persistently for three weeks in +5 D. lenses, the vision without glasses at twenty feet was $\frac{20}{25}$, or nearly normal.

Second. In reference to preventing single binocular vision, as your review states, there is nowhere in the book a suggestion of double vision being desirable. In fact, quite the reverse has been stated as desirable (pages 162 and 163). During repression, "when the excessive impulse has been partially suspended, it will sometimes suddenly return. . . . In this case the prism should be reduced to a possible point of fusion again, for if the full amount is continued the fusion stimulus is lost and the spasm runs riot. But if the prism is reduced to that point where fusion can take place again, the spasm will be held more or less under subjection."

It is somewhat of an error in presuming that the author looks upon the correction of eye difficulties as a panacea, and yet it does bring about desirable results that the author could reach by no other method and in a class of diseases that have been deemed more or less incurable. Page 40 reads: "Disease may take its origin from a sufficient irritation of any of the nerve centres, but much oftener will disease find its origin through the most highly acute and sensitive centres." Of all the nerve centres, those having the greatest area in the brain are the visual nerve centres. Second, they are the most sensitive. Third, the most constantly taxed of all centres in the nervous system. The great prejudice is against disturbing the correlation of the ocular muscles, whereas the great danger lies in the eyes remaining in that abnormally balanced condition that is threatening life. The universality of these abnormal conditions can be observed in the eyes of the blind, the dead, and unconscious (pages 68 to 78).

As to the cure of the long list of diseases set forth in the book, they can be demonstrated by any careful and patient operator, and, should it be desirable, the author has offered to lend his aid in such demonstrations (pages 8 and 9).

Chalmer Prentice, M. D.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Seventeenth Annual Congress, held at Rochester, N. Y., Monday, Tuesday, and Wednesday, June 17, 18, and 19, 1895.

The President, Dr. John O. Roe, of Rochester, in the Chair.

(Continued from page 247.)

A Consideration of Some of the More Important Principles of Intranasal Surgery.—Dr. W. K. Simpson, of New York, read a paper with this title. (See page 339.)

Dr. Mulhall said that he had operated very freely, and had not yet had any disagreeable accident from the use of the galvano-cautery. He had been the first to direct attention to the fact that the electrode should never be allowed to cool *in situ*. He had always used the electrode at white heat before and after contact. He always employed an application of four-per-cent. solution of cocaine to the nostril in general previous to the application of the galvano-cautery, and a ten-per-cent. solution to the particular spot. Immediately after the withdrawal of the electrode he had been in the habit of injecting a saturated solution of bicarbonate of sodium. He considered this very important, for where no shield was used the radiation of heat to the surrounding tissues often caused a good deal of pain and swelling.

Dr. Jonathan Wright said that a few years ago he had insisted that he had not had any great reaction from the use of the galvano-cautery, but, finding that his results were not very good, he had begun to use the cautery more vigorously. Since he had done this he had very frequently met with the reactionary symptoms referred to in the paper. To obviate this he had tried most of the methods that had been proposed, except the method of applying trichloracetic acid to the surface after the use of the cautery, yet he had not found any of them satisfactory. It seemed to him irrational to blow the stearates, or "powdered candle-grease," into the nose after operations. He believed that it was necessary to add the zinc to the stearate in order that the latter might be used in powdered form. He felt sure that there would ordinarily be more or less unpleasant reaction after the vigorous use of the galvano-cautery.

Dr. J. W. Gleitsmann, of New York, said that at one time he had recommended the use of trichloracetic acid after the galvano-cautery. Quite recently he had published another article on this method, and in this paper he had stated that he found reaction followed more frequently in those cases in which bleeding followed the galvano-cautery operation. The bleeding should be stopped before the application of trichloracetic acid. If this precaution were taken, the result of this treatment would be good.

(To be continued.)

Book Notices.

Practical Dietetics, with Special Reference to Diet in Disease. By W. Gilman Thompson, M. D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the University of the City of New York; Visiting Physician to the Presbyterian and Bellevue Hospitals. New York: D. Appleton & Co., 1895. Pp. xxii–802. [Price, $5.]

Thompson's *Dietetics* is an important contribution to the present revival of practical hygiene as fundamental to the science and art of medicine. The object of the work is to furnish "a text-book in which the practitioner of medicine may find detailed the appropriate diet for each disease which is at all influenced by right feeding." This aim has been carried out in the most liberal spirit, for there is hardly a question connected with the hygiene of food that does not find its appropriate treatment in these pages. Incidentally, the alcohol question, vegetarianism, and similar topics, so far as they bear on hygiene, are temperately discussed in the light of our present knowledge. The following subjects are treated of in the different sections: Food and food preparations; stimulants, beverages, condiments; cooking, food preservation, the quantity of food required; foods required for special conditions; food digestion; the general relation of food to special diseases; administration of food for the sick; diet in disease; rations, dietaries; receipts. The presentation is clear, practical, scientific, and remarkably free from technical pedantry, and the book is attractive reading for any one interested in the relation of food to health. Professor Thompson is to be congratulated on having enriched medical literature with a lucid and practical contribution on a subject of primary importance.

The Cell. Outlines of General Anatomy and Physiology. By Dr. Oscar Hertwig, Professor Extraordinarius of Anatomy and Comparative Anatomy, etc. Translated by M. Campbell, and edited by Henry Johnstone Campbell, M. D., Assistant Physician to the City of London Hospital for the Diseases of the Chest, etc. With a Hundred and Sixty-eight Illustrations. New York: Macmillan & Co., 1895. Pp. xvi–368. [Price, $3.]

This is a very good addition to the literature on histology. The first section of the book treats of the chemico-physical and morphological properties of the cell; the second, of its vital properties—viz., contractility, irritability, metabolic phenomena, and power of reproduction. The second section forms the bulk of the work and its most important portion. It is largely a work of compilation from German, French, and English sources, but the author seems unaware of the results of studies prosecuted in the United States. Still, the immense amount of literature to which reference is made renders the work very valuable.

BOOKS, ETC., RECEIVED.

The Science and Art of Obstetrics. By Theophilus Parvin, M. D., A. M., LL. D., Professor of Obstetrics and Diseases of Women and Children, Jefferson Medical College, etc. Third Edition, carefully revised. Illustrated with Two Hundred and Sixty-nine Woodcuts and Two Colored Plates. Philadelphia: Lea Brothers & Co., 1895. Pp. x–17 to 685.

The Diseases of the Liver. Jaundice, Gallstones, Enlargements, Tumors, and Cancer, and their Treatment. By J. Compton Burnett, M. D. Second Revised and Enlarged Edition. Philadelphia: Boericke & Tafel, 1895. Pp. 244.

Modern Medicine and Homœopathy. Two Addresses. By John B. Roberts, A. M., M. D. Philadelphia: The Edwards & Dicker Company, 1895. Pp. 69.

Indurative Mediastino-pericarditis. By Thomas Harris, M. D. Lond., F. R. C. P., Physician to the Manchester Royal Infirmary, etc. London: Smith, Elder, & Co., 1895. Pp. 7 to 67.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Vol. XVI. W—Zythus.

Alphabetical List of the Abbreviations of Titles of Medical Periodicals employed in the Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. From Volume I to Volume XVI, inclusive.

Transactions of the Medical Society of the State of Pennsylvania, at its Forty-fifth Annual Session, held in Chambersburg, 1895. Volume XXVI.

Seventeenth Annual Report of the State Board of Health of Illinois. For the Year ending December 31, 1894.

Physical and Natural Therapeutics. The Remedial Use of Atmospheric Pressure, Climate, Heat and Cold, Hydrotherapeutic Measures, Mineral Waters, and Electricity. By Georges Hayem, M. D., Professor of Clinical Medicine in the Faculty of Medicine of Paris. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia. With One Hundred and Thirteen Illustrations. Philadelphia: Lea Brothers & Co., 1895. Pp. 17 to 426.

Charter and By-laws of the Medical Society of the State of Pennsylvania. [Reprinted from the *Transactions.*]

The Shattuck Lecture, 1895. The New England Invalid. By Robert T. Edes, M. D.

The Quarter Dioptre Cylinder. By E. E. Hamilton, M. D., Wichita, Kan. [Reprinted from the *Annals of Ophthalmology and Otology.*]

Experiments with the United States (Krag-Jorgensen) Army Rifle. Protection of the Soldier. By General J. D. Griffith, N. G. M., Kansas City, Mo. [Reprinted from the *Kansas City Medical Index.*]

The Growth of the United Sates Naval Cadets. By Henry G. Beyer, M. D., U. S. N. [Reprinted from the *Proceedings of the United States Naval Institute.*]

Hæmatoblasts and Blood Platelets. By M. L. Holbrook, M. D. [Reprinted from the *Proceedings of the American Microscopical Society.*]

Epithelial Change produced by Irritation. By D'Arcy Power, M. A., M. B., F. R. C. S. Eng. [Reprinted from the *Journal of Pathology and Bacteriology.*]

Pulmonary Hypertrophic Osteo-arthropathy. By N. S. Davis, Jr., M. D. [Reprinted from the *Journal of the American Medical Association.*]

Medical and Surgical Reports of the Boston City Hospital. Sixth Series.

The Liver as an Organ of Elimination of Corpuscular Elements. By Gustav Fütterer, M. D. [Reprinted from *Medicine.*]

New Inventions, etc.

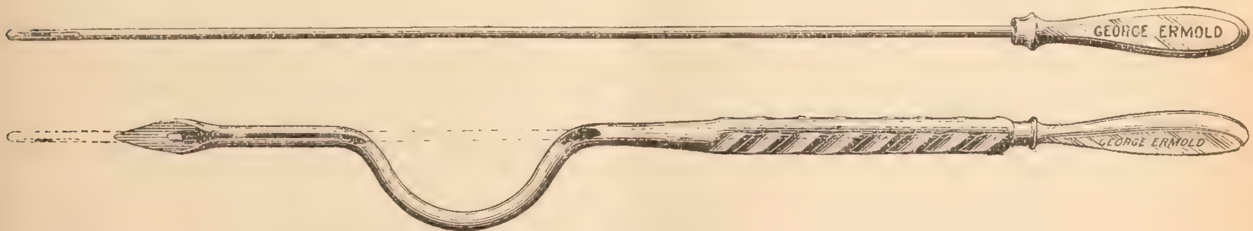
A NEW VARICOCELE NEEDLE.

By J. H. LOWRY, M. D.,

NEOLA, IOWA.

The accompanying cut represents a varicocele needle which I devised about a year and a half ago. The idea of a curved needle was first suggested by Dr. C. S. Merrill, of Buckton, N. Y., whose purpose was to use in conjunction with it a modified Keyes. The suggestion seemed a good one to me, and from it I evolved the needle which the cut illustrates, an instrument absolutely perfect. As can be seen, it consists of two parts, a curved needle and its companion, a straight, blunt-pointed needle.

In the first needle Mr. Ermold made for me, its point was like that of an ordinary aspirating needle. I improved this by having the point of the curved needle made diamond shape; consequently the puncture made, being larger than the needle proper, facilitates its introduction. The point explains all the features of the needle. Its application is so simple and safe that it seems superfluous to describe the various steps of the operation. We will suppose, however, the veins of the left testicle are to be ligated and the necessary antiseptic precautions have been taken. Grasping the scrotum between the thumb, index, and middle fingers, the veins are carefully separated from the cord, the veins to the outer side, of course; now a four-per-cent. solution of cocaine is injected at the point where it is intended to insert the needle. Pushing the hypodermic needle through into the integument of the opposite side, anæsthetize a small area through which the needle will pass. Holding the scrotum firmly, boldly thrust the needle through, an assistant quickly placing a sterilized cork on its sharp point. Pinch up a fold of the integument and by gentle manipulation work the curve into the scrotum, into which the enlarged veins readily slip. Now pass the blunt-pointed needle through the curve of its companion until it reaches the curve. Press your fingers against the outer side of the scrotum, slowly pushing the needle forward (it can not injure the dartos, veins, or contiguous parts, and in this way will include all the veins) until it passes into the channeled groove or slot of the needle and push it through. Thread this needle first and withdraw it. Now thread the curved needle with the other end of the ligature and withdraw it. Tie firmly by surgeon's knot, cut the thread short, and push the knot into the scrotum. This completes the operation. If more ligatures should be applied, as is sometimes required, the same technique should be repeated.



The application of each ligature should not consume over two minutes. With this needle it can be performed safely and without any difficulty whatever, and with the use of cocaine it is virtually painless.

Miscellany.

The Treatment of Diabetes Mellitus by Uranium Nitrate.—In the *British Medical Journal* for August 24th there is an article on this subject by Dr. Samuel West, of St. Bartholomew's Hospital. In 1851, he says, Leconte stated that the prolonged use of small doses given to dogs produced glycosuria. On this Dr. Hughes, a homœopathic physician, suggested the use of uranium in diabetes. He said he had tried it in several cases, and found that many were relieved, and several completely cured. The doses that he used were from a hundredth to a fiftieth of a grain.

Beyond these stray observations nothing, the author believed, was done until Chittenden published his first paper in 1888, and a second, in association with Lambert, in 1889. He found that in full doses uranium acted as an irritant poison, producing gastro-intestinal irritation, but when administered to rabbits in full doses it caused rapid emaciation, and the animal died with general weakness, loss of co-ordination, and paralysis of the locomotor muscles. Besides these symptoms in dogs acute parenchymatous nephritis was produced, with much albumin in the urine. After the albumin, a few days later, sugar also appeared in the urine, and this they regarded as very characteristic of uranium poisoning.

Further investigation, says Dr. West, showed that even in small quantities uranium and its salts had an inhibitory influence on amylolytic and proteolytic action, so that a few drops of a one-per-cent. solution of the nitrate of uranium prevented the action of ptyalin, and a rather larger quantity that of pepsin and trypsin.

The explanation which the authors gave of this action was that nitrate of uranium formed in combination with albumin a more or less constant and indigestible compound. When administered by the mouth the drug acted slowly, and small doses seemed to be almost as efficacious as large doses. For instance, they obtained the same effect with a sixth of a grain as with a grain.

When administered by injection into the veins, the drug was rapidly fatal, and even in small doses it caused a rise of temperature and an increased excretion of carbonic acid. Further investigation showed that the presence of albumin in the urine was due to a specific destructive action of the salts on the epithelium of the kidney, that sugar was produced in the urine only after poisonous doses, an effect also produced, they state, in poisonous doses of mercury and phosphorus.

On administering to a dog, weighing 18·8 kilogrammes, uranium nitrate in doses of half a grain, albumin appeared in the urine after taking this amount for five days, and this was followed five days later by the presence of sugar. On stopping the administration of uranium the sugar was the first to disappear, then the albumin; and then, on renewing the administration of the drug, neither albumin nor sugar appeared until the doses were increased up to ten times the original toxic amount, namely four grains. This would seem to show that some tolerance was gradually established.

This represents, says Dr. West, so far as he can ascertain, all that is known of the physiological action of uranium.

In considering in what class of cases it might be most profitable to investigate the action of the drug, his attention was directed to diabetes, for there was first of all the statement that it had been tried in that disease and had been found useful, although the evidence upon which the statement rested was not very conclusive; and further, there was the statement that the drug had a powerful action upon amylolytic and proteolytic digestion.

Having selected diabetes as the class of case to investigate, he administered the drug in a routine sort of way to a number of diabetic out-patients, with a view of seeing if any obvious action could be traced. He gave small doses at first and gradually increased them, not knowing how much a patient would be able to stand. He found after the drug had been administered a short time only that all the patients without exception stated that their thirst was greatly relieved, and the frequency of micturition and the quantity of urine passed greatly reduced. This result seemed very promising, and he then instituted a careful investigation by means of daily examination of the urine of certain patients whom he took into the wards for that purpose. The first patient he had under observation for more than twelve months, and during that time an almost daily examination of the urine was made, and a careful record kept of the patient's weight, diet, and general condition. The second case has also been under observation for a long time, though not under the close supervision that is possible, says the author, with a hospital patient, the lady being a private patient, and seen by him from time to time in consultation with her doctor. In all cases he has tried to place the patient under constant conditions, so that the only difference should be the administration or withholding of the drug which he was investigating; that is to say, they were all placed upon the usual strict diet, and placed under constant conditions. The results were then recorded for some little time—a few weeks or so in each case—before the administration of the drug. Then the drug was given, and the results then obtained compared with those previously recorded.

Besides the effect of the drug under investigation, the records show many other points of interest in respect to diabetes which will be referred to in their proper place.

The first case is that of a lad aged twenty-one years, who had complained of thirst, loss of flesh, and frequent micturition for a period of six weeks. The urine was found to be of high specific gravity (1·036) and to be loaded with sugar. He was taken into the hospital, kept in bed, and dieted. The effect of this change in his habits of life is well shown in the increase for the next few days in the amount of sugar and the amount of urine. This is in accord with what is well known in diabetes, that any sudden change in the conditions of life for the time aggravates the disease.

The diet and general treatment effected a considerable improvement in the patient, so that the percentage of sugar was reduced to six, having been on admission more than eight, and having risen on one occasion to as much as ten per cent. Five pounds in weight were also gained, and the patient appeared and felt very much better.

Having now got the patient into a condition of more or less equilibrium, uranium was administered in the form of the nitrate, and, as the dose of this drug was not established, it was at first given in small quantities—one and two grains three times a day—but this quantity was gradually increased up to ten or even twenty grains three times a day, when it was found that it could be tolerated by the stomach without disturbing the digestion.

The first effect noticed was that which the out-patients had already stated to occur—namely, the diminution in the amount of water and the decrease in the thirst. The amount of urine, it will be seen, fell from an average of between four and five pints to an average of about three. This, of course, greatly diminished the total amount of sugar passed in the twenty-four hours.

The percentage, however, of sugar did not fall materially until the medicine had been taken for more than fourteen days. It then fell to a mean of four per cent., varying, however, from day to day considerably between three per cent. and five per cent. As the improvement continued, the oscillation became less, and the tendency toward a more or less fixed percentage became marked.

The uranium was gradually increased up to fifteen grains by the commencement of June, that is, after a period of six weeks, during which period there had been an increase in weight of five or six pounds. The percentage fell further, and became more or less constant, about 3·5, and there was a further decrease in the amount of urine, the quantity averaging between two and three pints daily, and the total daily excretion of sugar, which had been as much as five ounces, was now under an ounce. The uranium was now gradually reduced, and about the third week in June the administration was stopped.

For a time no change occurred in the patient, but after about ten days the percentage of sugar again rose, and in the course of a week reached to between five and six; the quantity of urine, however, was not materially altered.

On July 18th the administration of uranium was again commenced, but this time not in the form of the nitrate, but as a double chloride of quinine and uranium. As the action of this form of the drug was not known, the administration was commenced in small doses, and it was not until July 30th that six grains had been reached, given three times daily.

The smaller doses seemed to have little effect, but as soon as six grains three times a day was reached, a sudden drop in the amount of urine and the percentage took place, the percentage falling to about three and the quantity to about fifty-five ounces. The dose was now increased to ten grains, and during the month of August sometimes the nitrate and sometimes the double chloride, according as the supply of these drugs held out, was administered. In the course of September a still further fall gradually took place in the percentage of sugar, until it reached below one, the amount of urine ranging between forty and fifty ounces. The uranium was then reduced in quantity gradually to three grains three times a day, and this was continued for some time longer; and during the months of October, November, and December there was hardly more than a trace of sugar present, oftentimes considerably under one per cent.

In the middle of November toast was permitted in the place of gluten bread, the uranium being continued in the same doses. This, however, caused no change in the condition of the urine, and appeared to do the patient no harm, so that he was allowed to have an amount of six ounces of toast daily, and this he had till Christmas time. The patient was now about a stone heavier than when he was admitted.

After Christmas time the patient was found to be not quite so well. The percentage was found to be much higher, fluctuating and reaching to nearly six per cent., while the urine was also increased in quantity; the patient had also lost two pounds, and looked more ill. Presumably this relapse was due to some error of diet during the Christmas festivities. Ordinary treatment having no obvious effect, and the percentage still continuing to rise, at the end of a fortnight the patient was given five grains of uranium three times a day. This, however, had no effect, and the percentage still rose, till in the middle of February it once reached as high as nearly ten, though it averaged about eight. The uranium was increased rapidly to fifteen grains, but it was not until this amount had been taken for nearly three weeks that its effect was produced, and then—that is to say, about the middle of March—the percentage fell to about four, and, having begun to fall, the fall continued, until at the end of March the sugar was almost gone, and the urine contained but very minute traces of it, a great deal below one per cent., and so this continued to the end of May, the uranium having some time previously been gradually reduced to five grains three times a day, which dose the patient continued to take.

At the end of May and during the early part of June the percentage rose again to between one and two, and finally, when the patient left the hospital in the middle of June, the percentage was about two, and the quantity of urine about fifty ounces. The patient presented none of the symptoms of diabetes, nor did he look ill. He said he felt well and strong, and left the hospital with the intention of going to work.

He was warned to be careful with his diet and his habits, but he disappeared entirely from observation for several months, and did not appear again until October, when he told us he had been harvesting, living a good deal in the open air and under rough conditions. He came back because he did not feel so well. He had been for about three months without any of the medicine.

On October 12th, when he first presented himself, the percentage of sugar was six; on the 19th, six; and on the 25th a little more than six. Five grains of uranium were given, and subsequently ten. By November 30th the percentage had fallen to a little below four. At Christmas time, probably again in consequence of the festivities of the season, the percentage was as high as eight. Fifteen grains of uranium were then given and the percentage fell rapidly, and by the end of January it was constantly under two. During the whole time the patient had been regulating his diet so far as he was able to do so.

The second case was that of a married woman, forty-five years old, who had been in robust health until about six months before the author saw her, at which time she began to suffer with irritation of the pudenda, frequency of micturition, thirst, and loss of flesh. Examination of the urine showed that she was diabetic. She was placed upon a fixed diet and treated with various drugs. She weighed at the beginning of her illness nine stone and three pounds. The author then suggested the use of uranium and had the necessary quantitative tests made very carefully. The previous treatment, he says, had caused considerable improvement in her general health, and the loss of weight had not continued. Before using the uranium, analyses of the urine were made, and the quantity of urine averaged about 1,625 cubic centimetres, the specific gravity 1·034, and the percentage of sugar about 2·4. At the end of November the use of uranium nitrate was begun in small doses. One grain was given at first twice daily, and then, a little later, three times a day. The results began to be manifest in the beginning of December, first upon the quantity of urine, which fell considerably, and as the dose was increased the percentage of sugar fell also. In three weeks from the beginning of the treatment the percentage began to fall, and with each increase in the medicine the percentage decreased, until after she had been taking two grains three times a day for a week or ten days the percentage was under one. Then three grains and a half were given three times a day, and the percentage fell to one half. Four grains were then given, and on January 22d the sugar disappeared entirely from the urine. At this time the average amount of urine was 1,300 cubic centimetres, and the specific gravity 1·018. From this date, says Dr. West, the sugar remained entirely absent, except on four odd days, until the end of April. The highest amount of sugar present on these odd days was 0·37 per cent. During May, June, and July traces were present, although on most examinations no sugar was found at all; but even when the small amount was found it was usually less than one half per cent., and the highest record was only 0·7 per cent. During all this time three grains and a half of uranium nitrate were given three times a day. In September, although still taking the uranium, the percentage rose, the quantity of urine was also increased and averaged about 1,500 cubic centimetres, and the specific gravity was about 1·020. At the same time considerable fluctuations were noticed in the quantity of urine, in the specific gravity, and in the percentage of sugar. This relapse, says the author, was due to experiments in diet and also to the consequence of worry in regard to household affairs. If he had seen her at that time, he says, he would have increased the amount of uranium nitrate.

The chief point of difference between this case and the preceding one, says Dr. West, is that small doses of uranium, not exceeding four grains, had a marked effect, though in the first case much larger doses were given, and appeared to be necessary. Still, it is quite possible that when the effect is once produced it can be maintained by small doses, and he is inclined to think that though the drug takes longer to act when given in small quantities, its effect does not depend entirely upon the amount administered each day, but that in some respects, though taking longer to act, the small doses may have almost as efficient an action as the larger ones.

Chittenden observed that the prolonged administration of uranium was followed by the presence of albumin in the urine, consequent upon an irritant and destructive action on the renal epithelium. It is important to state in respect of these observations that albumin did not appear at any time in the urine in either of these cases, and the author has never observed it in the other cases he has treated with uranium. Possibly this may be due, he says, to the gradual administration of the drug. If so, this is quite in accord with Chittenden's further statements that if the albuminuria produced by a certain dosage was allowed to disappear by suspension of the drug, the drug could then be given again, and increased even to ten times the original amount before albumin again appeared. This would appear to point to the necessity of giving the drug in small amounts at first and increasing them gradually.

These cases, taken with others, says Dr. West, all point to the conclusion that we have in uranium nitrate a drug which has a powerful effect upon diabetes. In the first and second cases the amount of sugar was greatly influenced by diet, and it is quite possible, he says, that this drug may be found most useful in this class of cases on account of its physiological action upon digestion. That the effect is clearly due to the drug is shown by the fact that when dieting and ordinary treatment have produced all the improvement that is possible, still further improvement takes place after the administration of the drug.

As to its mode of action, says the author, we can do nothing but speculate. He thinks it likely that its action is due to the effect it has in checking the rapid digestion of starch and of some forms of albumin, and that it may perhaps be especially useful by controlling excessive pancreatic digestion.

As to the size of the dose, experimentally it has been proved that in large doses uranium is an irritant poison. In large doses it would probably act as an irritant to the stomach and bowels; still, he has given ten, fifteen, and twenty grains three times a day without any such troubles being produced. Something, no doubt, depends upon idiosyncrasy. At the same time he thinks it possible that when the patient has once come under the influence of the drug a reduced dose may be sufficient to keep its action up.

Next as regards the loss of flesh. In the second case the patient attributed her loss of flesh to the action of the drug. This, says Dr. West, is doubtful, and certainly the first patient continued to gain weight while taking much larger doses.

As regards the salts of uranium, he has used only two—the nitrate and the double chloride of uranium and quinine. So far as he can see, there is no difference in the action of these two salts; still it may be that the uranous salts, instead of the uranic which he has been using, may have a different effect.

As to the method of administration, says the author, the nitrate is best given freely diluted with water and after food, commencing with a small dose of one or two grains twice daily after the chief meals, and increasing the quantity slowly at intervals of a few days until its effect is produced. So given he has not found it disturb digestion or cause any irritation of the stomach or bowels, and he has never found its prolonged administration produce albuminuria.

The same journal publishes an editorial in regard to Dr. West's paper, in which the writer remarks that the paper will be read with interest as indicating what is practically a new resource in the management of a very obstinate condition. The cases which Dr. West records appear to have been very carefully and accurately observed, and considerable pains seem to have been taken to get the patients into what may be termed a condition of equilibrium before the drug was exhibited, so as to avoid as many as possible of the pitfalls which lie in wait for the therapeutic investigator. There is, then, says the writer, no reason to doubt that we have in certain salts of uranium a powerful means of influencing some of the more prominent among that group of symptoms which we are wont to call diabetes. As to their mode of action, we can do nothing but speculate. Dr. West seems to think it likely that their action is due to the effect they have in checking the rapid digestion of starch and of some forms of albumin, and that they may be especially useful in the direction of controlling excessive pancreatic digestion, and he lays some stress on the fact that no uranium was discovered in the urine as suggesting that none had got into the general circulation. It must be remembered, however, the writer continues, that in experiments on dogs acute parenchymatous nephritis was produced with much albumin in the urine, showing that either the drug itself or some kidney irritant produced by its interference with assimilative processes had obtained access to the circulation. In fact, he says, until we know more than we do of the exact nature of diabetes it is almost idle to speculate as to the *modus operandi* of a remedy, although if it could be proved that the disease could be stayed by a drug which does not enter the circulation a long step would have been made toward localizing the seat of the morbid action. It is needless here to refer to the correspondence which has taken place in the general press regarding the assumed illustration afforded by the action of uranium salts of the homœopathic doctrine of "similars" beyond drawing attention to the fact that the production of glycosuria is not the only effect of a large dose, and that any facts which show that in more moderate doses the drug relieves one such symptom to the exclusion of others is, so far as it goes, a disproof rather than a proof of the homœopathic dogma.

Analgetic Antipyretics.—In the *Gazette hebdomadaire de médecine et de chirurgie* for August 17th there is a *résumé* of a report made by Dr. Schmitt before the *Congrès de médecine* *interne* on this subject. In healthy men, he says, the thermic action of drugs is variable; sometimes producing no results at all even in quite strong doses; sometimes, especially in feeble doses, a slight elevation of the temperature or a slight lowering. In fever patients, aside from a few exceptional cases, the antipyretic action is very distinct. Generally the febrile temperature is more easily influenced than the normal; but this action varies according to the character of the fever and to different conditions, such as the subjects, the drugs, the size of the dose, and the nature of the disease.

All clinicians, says the author, have observed individual differences. The condition of the digestive canal, which permits or hinders the absorption of a drug, is certainly the most habitual cause, and a drug that will act one day will not act another; it will act in one subject, while in another it will not produce any appreciable results under nearly identical conditions. Generally the long-continued fevers are more refractory to antipyretics than others, and it is when the temperature has a natural tendency to fall that the maximum effect is reached. Typhoid fever in its decline and the fever in tuberculosis are more influenced than that of pneumonia, erysipelas, and typhoid in the beginning. At the time of a natural defervescence the antipyretics produce hypothermia and symptoms of collapse more easily.

The lowering of the temperature may begin a short time after the ingestion of the drugs. It becomes manifest in about a quarter of an hour with phenol, in half an hour with antipyrine, in an hour with phenylurethane, acetanilide, and salicylic acid, a little longer with phenacetine and thermodine, and in about two hours with quinine. The fall of temperature (from the onset to the moment when the minimum is reached) is rapid with phenol and kairine, slower with salicylic acid, thalline, and acetanilide, and slower still with phenacetine and antipyrine. The thermic lowering is sometimes associated with a diminution in frequence of the pulse and a slackening of the respiration, not because of the direct action of the drug on the heart and on the lungs, but because of the correlative effect of the fall of temperature. In many infectious pyrexias, however, the pulse keeps its frequence and its dicrotism, the respiration remains accelerated and superficial, although the temperature will be lowered two or even three degrees.

With regard to the different drugs, says Dr. Schmitt, it is less according to the importance of their antipyretic action than to the accessory symptoms which accompany or follow their administration that we should judge of their relative value. All the antipyretics mentioned, he says, have an indisputable action on the blood. It is insignificant with salicylic acid and the aromatic acids in general, and very limited with quinine, antipyrine, and the complex derivatives of amidophenol. This action, Dr. Schmitt thinks, interferes all the more with the value of the antipyretic inasmuch as the blood of a fever patient possesses a greater capacity of absorption than when in a normal condition. Aside from the grave toxic symptoms, there is another series of secondary symptoms which are equally important, which are also observed with the use of the less dangerous antipyretics. For example, quinine in the apyretic subject and sodium salicylate produce buzzing in the ear more easily than in the fever patient. Antipyrine also causes a peculiar condition of cerebral excitation, and acetanilide and phenacetine sometimes a slight somnolence or headache. Occasionally there are nausea, vomiting, diarrhœa, and epigastric pains. Rashes are very frequent and may be observed following the administration of these drugs. Subcutaneous and mucous œdemas, even grave œdema of the glottis, have been observed; nasal catarrh, bronchitis, etc., hæmorrhages, and all symptoms which are attributed to the vascular, peripheral, primitive, or secondary dilatation, which arise from the physiological action of all these drugs, are also, according to some authors, the principal or the exclusive cause of their antipyretic action. A very common symptom is cyanosis, which seems to be due to the modifications of the hæmoglobin. With regard to the circulation, says the author, cardiac intermittence, palpitation, feebleness of the heart, and attacks of precordial origin are noted after the administration of large doses. The most serious symptom is collapse, which has followed the administration of even the most harmless antipyretic. These symptoms of intolerance are observed in fever patients, in women, and in subjects whose kidneys are in bad condition. The following rules should be observed in the administration of these drugs: 1. Avoid giving large doses to fever patients. 2. The condition of renal permeability should be ascertained. 3. The susceptibility of the patients must be noted. 4. Always examine the patients thoroughly before giving large doses, even if the drugs are the least dangerous ones.

Aside from certain exceptional cases, says the author, which are connected with the specific and antiseptic action of the drug, and not with the antipyretic action, the medicaments do not affect the cause of the fever. They lower the temperature in a passing manner while there is a sufficient quantity in the organism; they do not moderate the disease, but, given in sufficient and repeated doses, they may produce an almost normal temperature.

The analgetic action on the nerves is the most apparent, the best known, and the most commonly employed. It is found in all drugs of this class. Analgesia may be accompanied with the majority of accessory symptoms that have been observed in the thermic actions of the drugs; but they are, however, to be less feared in the apyretic subject. Collapse is exceptional, and eruptions and cyanosis are rarer, and we employ as analgetics agents that are excluded in fever. Anæmia, however, is a contraindication.

It is difficult to state, says Dr. Schmitt, what the best drugs are, and what the special indications for their employment are. The individual disposition of the patient, the inconveniences, the intensity of action, the characteristics of each drug, and, without doubt, the situation of the pain, must be taken into consideration. It has been noted that the association of several antipyretics has produced superior results.

Dr. Schmitt concludes with the following remarks: 1. The numerous medicaments which compose the group of analgetic antipyretics are characterized by their protoplasmal action, their action on the blood, and especially on the nerves. 2. The predominance or the exaggeration of one or the other of these actions is in relation to their chemical constitution, and causes the differences in their therapeutic effects and in the symptoms which they may produce. 3. Their use is not indicated in the large majority of cases except for one symptom, elevation of temperature or pain. 4. As antipyretics, or rather antihyperthermics, they may have a favorable action in certain cases; more often they are useless and dangerous. 5. As analgetics they occupy an important place.

The Abortive Treatment of Typhoid Fever.—In a preliminary paper on this subject by Dr. John Aulde, of Philadelphia, read by title before the twenty-first annual meeting of the Mississippi Valley Medical Association, held in Detroit last week, the author said that discussions bearing upon the abortive treatment of typhoid fever were of perennial interest, since the disease prevailed to an alarming extent throughout the country, and scarcely a year passed that we did not witness serious epidemics which resisted the most earnest efforts of our most skilled and talented physicians. Having had exceptionally favorable opportunities for observing the manifestations of this malady for the past ten years, the writer deemed it expedient to present a summary of his conclusions regarding its abortive treatment in the form of a preliminary paper.

By way of introduction, it might be well, he said, to indicate what was definitely meant by the term abortive, because much would depend upon the definition adopted. According to the *Standard Dictionary*, "abortive" was used in medicine to indicate: "(1) causing abortion; (2) shortening in course, as abortive treatment of fever." The expression was therefore intended to convey the idea of either aborting the disease or shortening its course, and with this as a basis the author's remarks would be directed to an elucidation of the methods to be adopted.

As a preliminary to these remarks it would be appropriate to mention some of the objections to the routine methods which had been so long advocated, although it was not deemed advisable to enter into a study of its pathology, because the pathological conditions in typhoid fever were too well known at the present day. The routine treatment of this disease was devoted principally to disinfection of the intestinal tract, the profession being under the impression that the micro-organisms found there a suitable soil for their rapid multiplication. This assumption, however, was true only in part. In the first place, while it was true that the micro-organism associated with this disease found a suitable nidus for its reproduction in Peyer's patches, we must bear in mind that inflammation of Peyer's patches was not always attended by ulceration; hence the morbid process was not actually in the intestinal tract, as usually understood. So long as the micro-organisms were confined to these bodies, although the disease was of intestinal origin, the effects were constitutional—due to the absorption of poisonous products, not only from the affected areas, but from the intestinal tract as well. It was principally for this reason that intestinal antiseptics had failed; and for the same reason, it should be added, we might expect benefit from the employment of remedies which assisted in rendering the contents of the small intestine aseptic, since from the foregoing explanation we could understand how advantageous they would prove. Salol, beta-naphthol, and guaiacol were efficient remedies of this class, and it had lately been suggested that the latter may be used externally with good results.

The first-mentioned of these remedies, salol, was effective in the treatment of typhoid fever because when it entered the intestine it was broken up into its constituenl elements, salicylic acid and phenol, and both ingredients were eliminated principally by the kidneys. But the benefits were often more apparent than real, and there came a time when these remedies acted unfavorably, owing to their poisonous influence upon the renal structures, and they had to be abandoned. Moreover, it was now well known that carbolic acid was a most objectionable cardiac depressant, and the faithful clinician found that, however beneficial its effects, salol could not be given continuously in the treatment of this disease. Beta-naphthol was not open to this objection, but its employment was often contraindicated by reason of the pain and burning which followed its administration, and, in addition to this, patients rebelled against it owing to its taste. This latter objection might be obviated by administering the drug in capsules, but even then we did not overcome the objection first noted. Nevertheless, it was the ideal remedy for this disease, provided we assumed it to be a disorder confined to the intestine, but it was not strictly an intestinal affection, as had previously been stated.

In the present state of medical knowledge, guaiacol ought to be the ideal remedy for the treatment of typhoid fever, but it was lacking in certain essential elements. Perhaps the principal objection to guaiacol was the fact that in order for it to be of service the whole system must be medicated. Guaiacol was largely eliminated by the pulmonary structures; it was also eliminated by the skin and kidneys, as well as by the bowels. The advantages arising from its local application were due to several influences: (1) Its influence upon the nervous system; (2) its influence upon the protoplasm at the points of elimination—namely, in the lungs, kidneys, and skin; (3) its special influence upon the protoplasm of the intestinal structures, where, owing to the inflammatory action taking place, a larger percentage was likely to find an outlet. And this was the secret of the successful employment of remedies in this disease. We needed a remedy which would enact the rôle of an antiseptic both locally and constitutionally; a remedy which, on entering the intestinal tract, would aid in rendering the intestinal contents aseptic, while at the same time it was dissolved and taken into the circulating fluids, to be again eliminated and pass through the same rôle until it was finally discharged through the bowel. Naturally, we should turn to one of the salts of mercury for this ideal remedy, but, unfortunately, mercurials had utterly failed to control typhoid fever, although calomel had been given, and was even now recommended, under the mistaken notion that it acted as an intestinal antiseptic.

We had in copper arsenite a remedy which fulfilled every requirement, and, moreover, it had been pretty thoroughly tested clinically. Since the autumn of 1888, when the author had first brought its virtues to the attention of the profession, he had used it constantly with the most satisfactory results. In addition to his own experience, he had received numbers of flattering reports from other physicians in general practice, notably one from Dr. A. H. Thomas, of Hurley, Wis., who had passed through an epidemic of typhoid fever which occurred in Hurley and in Ishpeming, Mich., during the summer of 1893. Dr. Thomas had reported (*American Therapist*, December, 1893) ninety cases treated in which copper arsenite had constituted the principal medicament, with but a single death, and that from intestinal hæmorrhage. Since the autumn of 1888, the author had never failed to abort or shorten the course of typhoid fever by the use of copper arsenite, together with the administration of other indicated remedies presently to be mentioned, and he believed that this disease could be arrested at any stage.

This latter statement was so sweeping in its character that an explanation should be added. In its incipiency, and probably for the first week of an attack, typhoid fever was specific, but after this period it was usually composite in character; in other words, it was a mixed infection, due to the effect of the disease upon the functions of elimination. Now, when the statement was advanced that typhoid fever could be arrested at any stage, it meant that the typhoid or specific nature of the infection could be caused to disappear, when there remained a simple continued fever. Any one having a case of typhoid fever under observation would find it an easy matter to verify this.

The plan of treatment was then briefly outlined as follows: When a case of suspected typhoid fever came under observation the patient is confined to bed, a suitable diet ordered, and a careful record of the morning and evening temperature kept. As a rule, copper arsenite in doses of one one-hundredth of a grain was given at intervals of from four to six hours while the patient was awake. Should there be evidences of hepatic complications, mercury biniodide was substituted for the copper salt, one one-hundredth of a grain being administered at intervals of two or three hours for one or two days, and that was generally sufficient to correct or remove this complication for the time being. It might be necessary to repeat this medication, but the mercurial should not be permitted to supplant the copper salt. When the patient was restless or sleepless, it might be expedient to administer small doses of the bromides, or codeine sulphate might be substituted, one fifth of a grain at intervals of two hours during the afternoon. In addition to this, the author had found nuclein solution, the animal product, most effective in restoring the functional activity of the glandular system, from one third to one minim, at intervals of from two to four hours. In serious cases, or when the patient had advanced to the second week of the disease, both remedies should be given hypodermically, preferably in the following manner: A tablet of chemically pure copper arsenite containing one grain of the salt was dissolved in four ounces of boiled water, and to this mixture dilute hydrochloric acid was added drop by drop until the mixture becomes clear, being thoroughly agitated meantime. Each thirty minims of this clear solution carried approximately a milligramme (one sixty-fifth of a grain), and this amount could be injected under the skin at some indifferent point night and morning. The nuclein solution was given in doses of from two to five minims (five to ten drops), diluted with a sufficient quantity of sterilized water to make a syringeful, and introduced subcutaneously in the same manner twice a day.

The simplicity of the treatment was all that could be desired, and its efficiency would be apparent to those who had the temerity to test its virtues. Several of the author's professional friends had reported remarkable results from the use of nuclein .solution alone, although in most instances it had been tried only in the hopeless cases, after the apparent failure of the approved methods.

Anodynes were used solely as a temporary expedient for the purpose of quieting the irritant effect of the poisons upon the nervous system; the mercurial was employed for its influence upon the hepatic function, which was apt to become deranged, owing to the extra work thrown upon the liver in eliminating or destroying the poisons; the copper arsenite acted as an intestinal antiseptic, through its influence upon the nervous system and upon the protoplasm at the points of elimination—namely, the epithelial cells of the intestinal mucous membrane. Through its irritant effect upon protoplasmic cells throughout the body, being administered in extremely small doses, it acted continuously as a stimulant, augmenting cellular activity in every part. The nuclein complemented this action by enacting the rôle of a ferment; but, in addition to this, it established an artificial leucocytosis, an important function which had been demonstrated to be absent in typhoid fever. This latter was a feature which had been overlooked in the treatment of typhoid fever. For the lack of proper nourishment, phagocytotic activity was held in abeyance in this disease; the multinuclear white blood-corpuscles, being unprovided with suitable pabulum, were unable to produce the needed defensive proteids, of which nuclein was the chief, and as a consequence metabolism was hindered and waste products accumulated, so that to the specific infection were added the disorders resulting from suboxidation and defective elimination.

By this plan of treatment typhoid fever could be arrested, if taken in the early stages, within a few days or at most in less than a week. When the treatment was adopted during the second week of the disease or subsequently, the peculiar character of the affection was changed; the temperature fell, the patient experienced a feeling of well-being, threatened complications subsided, and recovery took place, relapses being unknown.

A Rational Diabetic Flour.—Dr. Heinrich Stern, of New York, contributes an article to *Food and Sanitation* for August 17th on the importance of suitable breadstuffs for use in diabetes. The bodily constitution of man, he says, demands some kind of breadstuff, of which it may be deprived temporarily and partially, but never for a long period or completely. This fact has been recognized by some modern physiologists who do not object to bread in small quantities as a part of the diet in diabetes mellitus. The complete and sudden deprivation of breadstuffs undoubtedly produces more harm in a diabetic patient than a moderate use of that article, and to stop the saccharine supply completely is not what is wanted. On its duration or upon the percentage of sugar the severity of diabetes does not depend, but upon the general power of resistance of the body and upon the vitality of the non-affected organs; and the power of resistance and vitality must be sustained, even if an additional tenth of one per cent. of diabetic sugar may be demonstrated in the urine.

With the view of supplying properly adapted and suitable breadstuffs for diabetes, says Dr. Stern, the so-called diabetic flours have sprung into existence, and it is alleged that they are free, or nearly so, from carbohydrates. All these flours, however, he says, contain large quantities of starch. It seems beyond our means at the present day to extract, to a sufficient degree, the carbohydrates of the marketable grains; in fact, if a complete extraction of the starchy principles of our grains could be accomplished, there would be very little left to make a satisfactory article of food. The bran bread of Prout, which contains a great percentage of cellulose, has not proved to be a desirable food for diabetics on account of its indigestibility and of its irritative action on the mucous membranes of the intestinal canal. The Soya bread and the aleuronaut bread of Ebstein have also been used in the dietetic treatment of diabetics without having achieved universal recognition and employment. Almond bread was introduced by Pavy, but, if not properly prepared, it is very hard and oily, and not fit for digestion.

For a long time, says the author, he has recognized the fact that a completely decarbohydrated meal at a price convenient to every one can not be obtained from any of the cereals; that such a completely decarbohydrated meal is not essential, but is even a drawback in the rational diet of diabetics; and that a meal like that of almonds, partially unoiled and with a small percentage of carbohydrates, at a mere nominal cost, is the principal thing. After a series of experiments Dr. Stern came to the conclusion that such a meal could be obtained from the peanut.

The most interesting point for us to consider, he says, is the chemical composition of the peanut. We find in the Alabama peanut kernel 10·88 per cent. of water, and in the water-free substance of the kernel 4·26 per cent. of ash, 35·37 per cent. of protein, 2·66 per cent. of fibre, 19·33 per cent. extract free of nitrogen, 55·37 per cent. of fat, and 5·50 per cent. of nitrogen. The average of all available analyses of peanut plants of different crops and different sections of the earth shows 29 per cent. of protein, 49 per cent. of fat, and 14 per cent. of carbohydrates in the dry material.

Peanut meal (as known in commerce) is the remaining part (the residue) of the peanut after the oil has been extracted. The oil is extracted on a large scale in European countries and utilized as a substitute for olive oil, for lubricating purposes, and in the manufacture of soap. The meal contains, as the averages of two thousand analyses show, about 52 per cent. of protein, 8 per cent. of fat, and 27 per cent. of carbohydrates, and is therefore a most concentrated and valuable animal food. The peanut meal, or peanut cake, as it is commonly called, is of a quite agreeable taste, and not very hard to digest.

Following this is given a comparison made by Professor König, based on the price in Germany of the following twelve principal foods reduced to units of nutrition:

Comparison of the Nutritive Value and Cost of Twelve Principal Foods.

	Nutritive units per pound.	Cost per 1,000 units in cents.
Skimmed milk	98·20	10·4
Skimmed-milk cheese	870·00	11·0
Full milk	155·50	11·5
Bacon	1,257·70	15·5
Butter	1,186·30	20·4
Veal	525·90	22·2
Beef	530·90	26·0
Peas	778·60	4·2
Potatoes	138·20	5·1
Rye flour	603·60	6·0
Rice	534·60	10·0
Peanut meal	1,425·00	3·0

This shows that peanut meal is the most nutritious and the cheapest of this list of foodstuffs.

Satisfied, he says, that the peanut is one of the most perfect and, at the same time, one of the cheapest foodstuffs known to us, a foodstuff abundant in nitrogenous and fatty matter, but very deficient in carbohydrates, he began to utilize it with diabetic patients, and his method of preparing what he calls the diabetic peanut flour is a very simple and empiric one, and only destined to be employed domestically. The following is a process of its manufacture on a small scale, and, no doubt, if this peanut flour should prove to be a permanent success in the dietetic treatment of diabetes, the proper means to obtain the flour in large quantities can be easily devised.

The peanut kernels, including their inner coating, which is also nutritious and not very abundant in carbohydrates, are put in a tin kettle, into which small holes have been previously made. This is kept uncovered and placed on or into a pan filled with water, and this has to be kept boiling for about half an hour to allow partial extraction of the superfluous oil. After the kernels have been dried they are pounded into fine particles with the aid of a rolling pin. The pounded or bruised kernels are then placed in boiling water acidulated to some degree with tartaric acid or vinegar, preferably with the latter. The boiling in the acidulated water has to be continued for some time for different reasons:

1. For the extraction of saccharine elements, occurring to some amount in nuts of American growth. (Peanut flour naturally contains proportionally small quantities of saccharine principles, which have to remain to some extent in the flour for reasons given.)

2. To overcome the smell and taste characteristic of the peanut.

3. To prevent emulsification of the remaining oil, which, to some degree, is essential to a rational diabetic food, as fats must supply the deficiency of the carbohydrate elements. (An emulsifying process will otherwise take place immediately on the addition of water, as great quantities of albuminous matters are present.)

It is true that a partial emulsification of the oil might relieve the pancreatic juice of some work, and this might be especially beneficial in such grave cases of diabetes mellitus in which the pancreas seems to be involved. Dr. Stern leaves it to future investigation to determine whether the oil in peanut flour shall be introduced in its natural state into the alimentary tract or in the form of a partial or complete emulsion.

Having undergone a thorough boiling with acidulated water, the ground kernels are subjected to dry heat, to effect complete evaporation of that fluid; but great care must be exercised that they do not become browned or roasted. An additional treatment with the rolling pin will produce nearly as fine a flour as the common wheat flour of commerce.

With apparatus such as the household furnishes, a flour such as the mills are capable of producing on a great scale can not be expected to be produced. This is especially true with the hydrocarbonization (unoiling) of the flour. From thirty to forty per cent. of the oil, says the author, is necessary for a complete and rational diabetic food. More hydrocarbons are not required and would interfere with digestion. It is not possible to control the unoiling by the described domestic process and to determine with any degree of certainty the percentage of oil extracted; if the flour is manufactured by mills, however, this could be readily controlled and ascertained. The most simple process of extracting the oil, when manufacturing the flour on a large scale, is by pressure, either by the employment of the cold or the warm process; the pressure can be so regulated as to extract just the amount of oil that is not wanted.

Dr. Stern has made use of the flour in different ways, the most simple of which is in the form of a porridge, some milk being added to it. Bread and biscuits can also be baked from it, but the nicest and most easily digestible form in which to utilize it is, he thinks, the German pancake. Every housekeeper understands how to make the latter, and a tasty and always fresh piece of pastry can therefore be produced on short notice.

He has used this flour with four diabetics, and a number of other patients. In the non-diabetic cases, mostly tuberculous in character, he obtained satisfactory results, inasmuch as digestion was not to any extent taxed, and in some cases the weight of the patient did not decrease, while in one instance there was actual gain in weight noticed.

The first diabetic patient to whom he recommended the flour was also the first person whom he knows to have made use of it. Right at the outset it turned out to be a complete failure, as the digestion became very much impaired, thereby aggravating the general condition of the patient, an old man. A more careful and rational preparation of the flour, however, and the employment of smaller quantities when starting with it, increased its digestibility, and to-day this patient enjoys, as far as circumstances permit, a comfortable state of health. The other three patients also thrive well on this flour, the German pancake being the usual form in which they employ it. In conjunction with eatables made of this flour, Dr. Stern allowed those patients only such foodstuffs as are generally recognized as permissible in diabetes mellitus. He has done this, he says, not because he is a believer in the complete exclusion of carbohydrates in diabetes (fats and even nitrogenous substances are capable of producing glycogen), but to investigate the intrinsic value of peanut flour as a food, and its ability to reduce the glycogenic sugar of the urine.

Mental Anorexia.—The *Presse médicale* for August 14th publishes a report of a recent meeting of the *Congrès des méde-*

cins aliénistes et neurologistes at which M. Sollier read a paper on what he termed mental anorexia, which he said was a general disorder of nutrition the two fundamental characteristics of which were anorexia and a peculiar psychical condition which preceded or accompanied it. Ordinarily it was confounded with the nervous dyspepsia of Leube, and especially with the primitive form of hysterical anorexia. It should, however, he said, be distinguished from these, for the prognosis was much graver, death being the termination in half the cases. This affection was observed in young women only. The hereditary mental predisposition was manifested in infancy by a peculiar characteristic which appeared to be the principal cause. Furthermore, the subjects thus attacked were usually badly developed, and showed few of the moral and physical attributes of their sex.

The onset of this affection was slow and insidious, said M. Sollier. The appetite diminished, then disappeared altogether. Emaciation took place very rapidly, and the peripheric circulation was badly performed. The vaso-motors were in a condition of almost permanent restriction, and menstruation was suppressed. The general sensibility and the special senses were not involved, although the sense of taste was somewhat impaired. There was scarcely any pain except at the onset of the affection. There was no dilatation of the stomach, but intestinal atony and obstinate diarrhœa were observed. In the advanced stage of the disease a more or less marked insomnia supervened, but no headache or rhachialgia. The patients' general strength diminished more and more, although they would refuse to acknowledge the fact. They were really, said M. Sollier, in a peculiar mental condition which gave rise to the idea that they must restrict themselves in their diet, and in order to accomplish this they made all possible excuses to avoid eating.

The psychical functions became altered; their powers of attention were feeble and the memory diminished. A moral apathy also accompanied this mental condition. Occasionally there were a few vague hypochondriacal ideas, and nothing interested the patients.

The course of the affection, said the author, was essentially progressive and continuous, if an early energetic intervention was not employed. The duration was variable, but comparatively short, and death might take place within two years. In half of the cases progressive cachexia, acute tuberculosis, or an intercurrent affection set in, and the prognosis was then very grave, and it required an intervention all the more rapid and energetic, as the patients in such cases might at any moment become rational.

The diagnosis was extremely difficult, as there was nothing definite upon which to form an opinion. With regard to the treatment, said M. Sollier, as little as possible should be used. Isolation, moral treatment, hydrotherapy, and a proper diet were to be resorted to, and not prolonged for more than three or four months; frequently the treatment should be suspended at the end of six weeks or two months.

The pathogeny of this affection was rather obscure, but it seemed that it could be regarded as a disorder of general evolution of a central origin.

M. Regis also had observed similar facts, and he called attention particularly to the part that puberty played in the ætiology of this mental anorexia.

An Important Early Sign of Tabes.—The *Boston Medical and Surgical Journal* for August 29th publishes a letter from Dr. James J. Putnam, of Boston, who says that a number of years ago, while trying the effect of hyperflexion of the legs for the relief of pain in tabes, he observed that it was frequently possible to flex the leg at the hip, without bending it at the knee, so far that it would almost touch the ear without exciting the painful sense of popliteal tension which is so speedily felt by a person in health.

Since then, he says, he has once seen a brief reference to this fact, but he has never seen the sign described in the textbooks nor commented on at any length.

He states, however, that he has convinced himself that it is not only an interesting feature of advanced cases of the disease, but that it may help one out at an early stage where the diagnosis is doubtful. He has recently seen the case of a gentleman, who presents no other signs of tabes beyond the presence of characteristic pains which have followed him for the past three years. The knee-jerks are both present, though one is less well marked than the other, and the same may be said of the reactions of the pupils to light. The patient has been seen by an eminent physician of New York, who assured him that he had not tabes, and although Dr. Putnam thought that the diagnoses could be made with confidence, yet, he says, he felt strengthened in this opinion by the presence of the sign referred to.

So far as he can now judge, the degree to which the hyperflexion is possible without exciting pain is proportionate rather to the pain than to any other symptom, and is not proportionate to the ataxia. The sign, says Dr. Putnam, is certainly one which deserves study, though it is not invariably present.

The Craig Colony for Epileptics.—At the session of the American Social Science Association at Saratoga on Wednesday, Dr. Frederick Peterson, of New York, president of its board of managers, delivered an address upon the purposes and progress of Craig Colony. The following brief *résumé* of his remarks is taken from the *Sun:*

The Object of an Epileptic Colony.—The object of a colony for epileptics is to provide for the four great needs of these unfortunates:

1. To give them schools where they may be educated as other children and young people are.

2. To afford them industrial training in any sort of occupation they may desire to follow.

3. To provide those epileptics with a home to whom all other doors are closed.

4. To treat every case of epilepsy according to the best known scientific methods.

Need for Provision of this Kind.—Epilepsy is a peculiar disease, characterized by loss of consciousness and a convulsion. The fit or epileptic seizure occurs from time to time, and may last from a few seconds to a few minutes, sometimes longer. Some patients have fits every day or oftener, some once a week, some once a month, some only once or twice a year. It is only during the fits that they are incapacitated. At other times they are well and strong and healthy looking, and quite as able to work and study as are other people. But the fact that they have these fits, no matter how rarely, debars them from many of the privileges enjoyed by their more fortunate brethren. They will not on that account be received into the public schools, and can receive no education. They can not attend church or social gatherings. They are shunned by their playmates, and they become burdensome to their families. When they grow to adult life no one wishes to employ them, so, although they are able to learn a trade or profession, the shops and colleges are closed against them. No general hospital receives them as patients, and, in fact, there is no place at all which is open to them except an almshouse or an insane asylum, and, as the insane asylum is better than the almshouse, many patients are sent there in preference to a poorhouse.

There are 120,000 epileptics in the United States. There are some 12,000 in the State of New York, of whom more than 1,000 are in almshouses and asylums on public charge.

The Situation of Craig Colony.—Craig Colony, named for the late Oscar Craig, of Rochester, formerly president of the State Board of Charities, consists of nearly 1,900 acres of land in the Genesee Valley. It is reached by two trunk lines of railways (the Erie and the Delaware and Lackawanna) and from roads centring at Rochester by the Western New York and Pennsylvania Railroad. The colony has its own post office and railway station known as Sonyea, an Indian word signifying sunny place. The land is extremely fertile and beautifully diversified with fields, woodlands, meadows, and glens. The farms, gardens, and orchards are already in a high state of cultivation and will yield this year an income of $12,000 to $15,000.

The Plan of the Colony.—The law establishing the colony required that it should be arranged on the village plan. To this end the services of Frederick Law Olmstead, the landscape architect, were secured by the board of managers, and he has prepared the scheme of an industrial and agricultural village upon the best principles. There are already many buildings upon the grounds (some thirty or forty) which are to be immediately utilized. Craig Colony will not resemble an institution in any particular, but will look more like a country town than anything else. As the patients are received, they will be set to work or at study in various ways. They will take care of the farms, gardens, and orchards; they will plan and build new houses. There will be among them tailors, shoemakers, printers, bookbinders, masons, iron workers, carpenters, painters, and so on. In fact, every sort of employment, every sort of recreation, everything, in short, that goes to make up the life of a country village will be found in this colony, the only difference being that the citizens of this community will be epileptics.

The Economy of the Scheme.—The resources of the land are such that almost everything in the way of food for the inhabitants of this unique village can be raised by themselves, and their surplus agricultural and manufacturing products judiciously managed can make the colony practically self-supporting. Thus the 1,000 patients already upon public support in this State are to be no longer a burden to the taxpayers.

Opening of the Colony.—Work has been progressing very rapidly during the year to prepare existing buildings for the reception of patients. The first quota of patients, numbering sixty, will be taken from the almshouses during October. We propose to receive 200 during the winter and perhaps more. Estimating the capacity of the present buildings at 300, we shall need additional buildings during the coming year to accommodate 300 more patients, before the 600 now in the almshouses can be cared for.

State Patients.—The patients taken from the almshouses and asylums will be known as State patients, and they will be provided for before any private patients can be received. They will be sent to the colony by the poor authorities of each county according to a form required by law, the blanks for which will be furnished on application to the State Board of Charities or the superintendent of the colony.

Private Patients.—As soon as all epileptics now upon public charge eligible for admission to the colony are provided for, private patients will be received at prices to be regulated by the board of managers, according to the kind and extent of care and attention required. Such patients may, if it be desired, erect cottages for their own use upon the grounds upon application to the board of managers.

Restrictions as to the Kind of Cases received.—There will be no restriction as to the age of patients admitted, and the only restriction practically applies to the mental condition. Insane epileptics, or epileptics subject to insane outbreaks, can not be taken into the colony.

Officers of Craig Colony.—The State Board of Charities has jurisdiction over this colony. The board of managers consists of Dr. Frederick Peterson, president, New York; Mr. Charles E. Wadsworth, Geneseo; H. E. Brown, Mount Morris, secretary; W. H. Coddeback, Buffalo; Dr. Charles E. Jones, Albany; L. S. Oatman, Buffalo; Judge O. P. Hurd, Watkins; Jeanette B. Hawkins, Malone; and H. A. Phillips, Lowville. The medical superintendent is Dr. William P. Spratling.

Bellevue Hospital.—The Commissioners of Public Charities and Correction have lately asked the members of the fourth division of Bellevue Hospital to form an organization for the purpose of giving instruction to graduates and third-year students. The medical staff of the fourth division consists of Dr. C. L. Dana, Dr. George B. Fowler, and Dr. Alexander Lambert. The surgical staff consists of Dr. J. W. S. Gouley, Dr. Charles Phelps, and Dr. W. F. Fluhrer. The gynæcologist is Dr. W. Gill Wylie.

The following communication from the commissioners and the answer thereto are given for the information of the profession:

"DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION.
"COMMISSIONERS' OFFICE, NEW YORK, *September 3, 1895.*

"GENTLEMEN: I am directed to transmit the following proceedings of the board, at a meeting held this day:

"'*Resolved*, That the seven members of the fourth division of Bellevue Hospital be requested to form, without delay, an organization for practical instruction to graduates in medicine and third-year students in the hospital and the Bureau of Medical and Surgical Relief for Outdoor Poor.

"'*Resolved*, That the members of the fourth division shall be empowered to draw from the institutions subject to the division all necessary clinical material.

"'*Resolved*, That the commissioners will heartily co-operate with the fourth division in carrying out the scheme of instruction.

"'*Resolved*, That certificates issued to those who shall have attended instruction, and signed by the seven members of the fourth division, shall be countersigned by the commissioners, and shall bear the seal of Bellevue Hospital.'

"By order, G. F. BRITTON, *Secretary.*"

"NEW YORK, *September 6, 1895.*

"*To the Commissioners of Public Charities and Correction.*

"GENTLEMEN: At a meeting of the fourth division of Bellevue Hospital, held on the fourth day of September, your communication was presented and read. The members of the division desire to express their high appreciation of the step you have taken, in the interest of the hospital and of the people at large, in thus adding to the usefulness of the vast amount of clinical material in Bellevue. They have therefore resolved to accept your invitation to become a teaching corps, have formed the organization which you requested, and have further resolved to begin, on or about the first of October, the courses of instruction instituted by your honorable board. Each course of instruction shall continue six weeks, and not less than five courses shall be given annually.

"Very respectfully,
"W. F. FLUHRER, M. D., *Secretary.*"

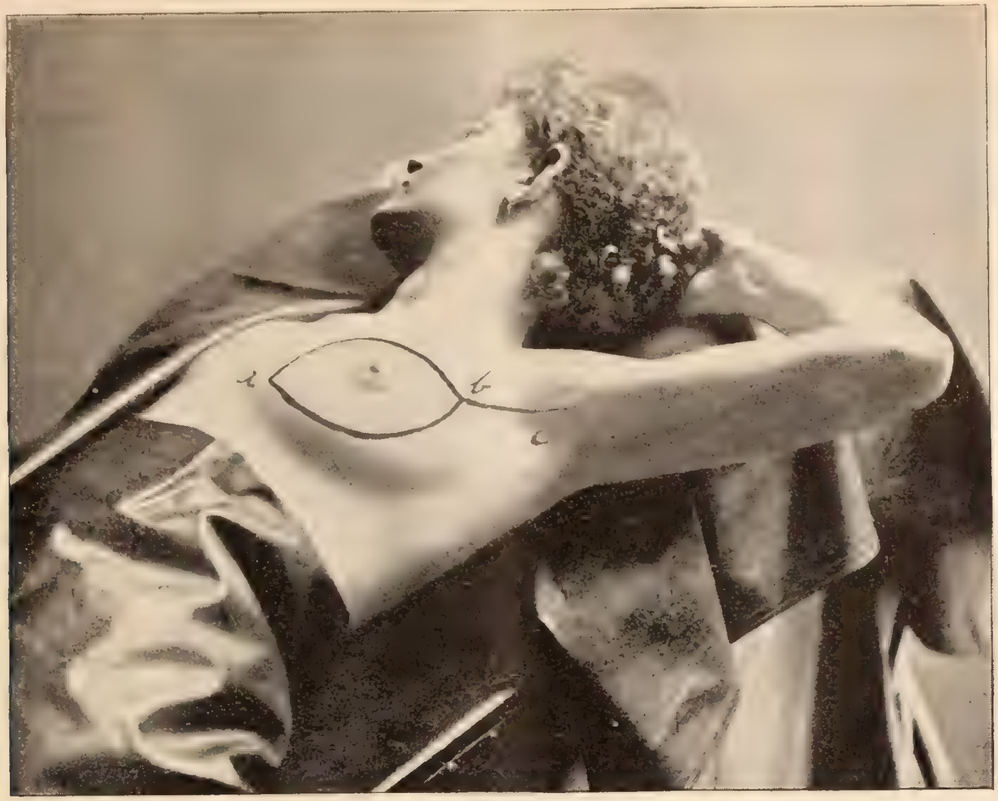


Fig. 13.

Original Communications.

OPERATIVE SURGERY IN THE SERVICE OF WILLIAM T. BULL, M. D., AT THE NEW YORK HOSPITAL,

From July 1, 1890, to January 1, 1895.

By E. M. FOOTE, M. D.,
LATE HOUSE SURGEON.

(*Continued from page 328.*)

OPERATIONS UPON NEW GROWTHS NOT ABDOMINAL.

There are in the record eighty-five operations properly classed under this head—sixty-four for malignant tumors and twenty-one for benign tumors. Of the latter, eight are mammary, which, with twenty malignant tumors of the breast, makes twenty-eight cases in which the breast was amputated in whole or in part. The remaining malignant tumors were distributed as follows: Of the lip, five; of the mouth, including two of the tongue, nine; of the face, nine; of the neck, including one carcinoma of the larynx, eleven; of other portions of the body, ten cases.

As rare cases may be mentioned primary carcinoma of the submaxillary gland, and one case of primary carcinoma of the cervical and another of the inguinal lymphatic glands. Two of the cases promptly recurred.

There were six deaths from operation: One breast case died of sepsis on the sixth day; a case of epithelioma of the cheek died of erysipelas on the sixth day; a case of extensive epithelioma of the superior maxilla died in six hours of shock; the carcinoma of the larynx died in thirty hours of exhaustion, hastened by the inhalation of regurgitated fluid; two cases of carcinoma of the external genitals died in thirteen and seven days respectively of septic absorption associated with uræmic symptoms. This gives an operative mortality for the malignant tumors of ten per cent.

The chapter on malignant tumors remains one of the saddest in surgery, despite the ever-widening circle drawn by the knife of the operator. The immediate results are brilliant, but he who takes the trouble to look up his cases two years later finds a startling number of them already dead or dying of recurrence. There are numerous exceptions, to be sure. A striking case is No. 31 in the succeeding table. The patient, J. S., five times submitted himself to operation for epithelioma of the lip and recurrences. At the last operation the material removed was pronounced purely cicatricial, and, as four years have since elapsed without further trouble, the patient may surely be said to be cured.

The record would show more cures if operation could be undertaken early. This is an old complaint, and physicians have been often enough scolded for it when the patient is usually at fault; but, as people are not likely to dread operations any less in the future than they do now, little improvement in results is to be looked for in this direction.

In quite another direction experimental study has produced some results which may lead to a very different mortality from malignant tumors than the best which surgery offers to-day. The favorable effect of accidentally contracted erysipelas in patients suffering from sarcoma encouraged the inoculation of this disease as a means of cure of sarcoma. Two of the cases mentioned in this report (Nos. 54 and 70) were among the first in this country to be so treated. While too little is known of the subject to speak of these two cases as cured, an unmistakable diminution took place in the tumors under the influence of the injections of erysipelas streptococci and their products, and the patients are to-day both alive and in fair health, at a time when, in the normal course of the disease, they would both be dead.

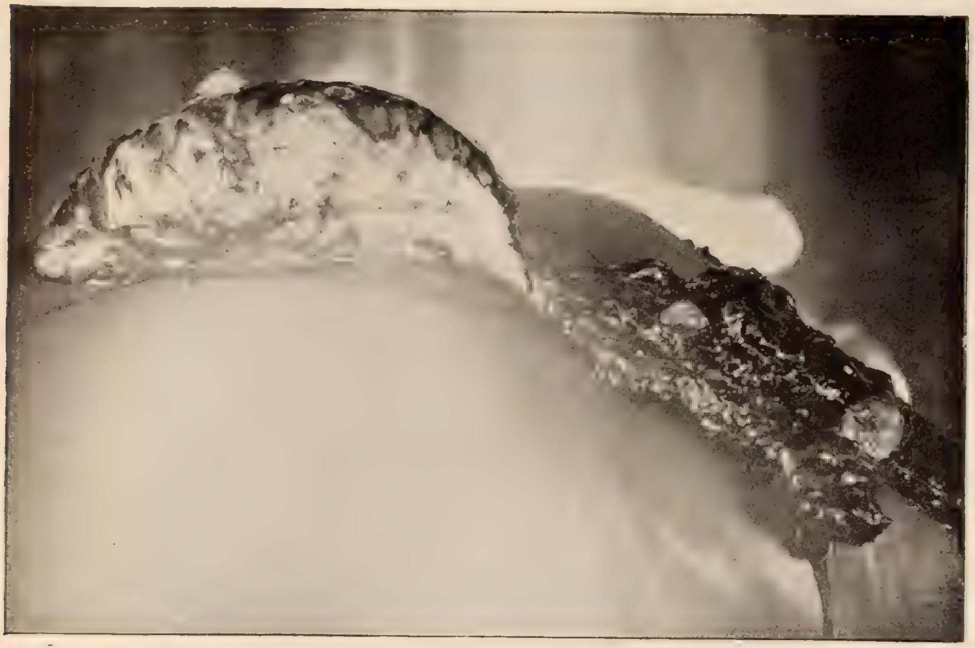


Fig. 14.

TUMORS OF THE BREAST.

The incision made use of in amputation of the breast is shown in Fig. 13. This incision is preferable to the ⊥-shaped one. It gives plenty of room, and when the wound is closed only a linear scar remains. The usual operation has been to remove the whole breast when any suspicion of cancer was present, together with the pectoral fascia and the axillary lymphatic glands and fascia. In spite of this radical treatment, more than two thirds of the cases heard from had fatal recurrences. Fig. 14 is from a photograph of a breast and the axillary contents after removal.

TABLE OF NEW GROWTHS.

BENIGN TUMORS OF THE BREAST.

Number.	Name, age, condition.	Previous history.	Injury.	Physical examination.	Axillary involvement.	Operation.	Drainage.	Wound healing.	Days in hosp.	Pathologist's report.	Subsequent history.
1	M. Q.; 34 years; married.	Eleven years, tumor; slow gro'th; pain slight.	No.	Right externo-superior; size of bean; movable.	No.	Excision of tumor.	No.	Primary.	6	Adenoma.	Not traced.
2	A. L.; 35 years; single.	Three years, tumor; slow, painless growth.	No.	Right superior; size of walnut; movable.	No.	Excision of tumor.	No.	Primary.	8	Intra-canalicular fibroma.	Not traced.
3	C. H.; 43 years; married.	One week ago discovered tumor; painful.	No.	Right externo-superior; movable.	Two glands.	Excision of tumor.	Rubber.	Primary.	8	Fibro-cystic tumor.	Not traced.
4	H. R.; 52 years, married.	Left breast removed for tumor 5 mos. ago; tumor in right breast 3 weeks.	No.	Right inferior; size of egg; movable.	No.	Excision of breast.	Rubber.	Primary.	12	Adenoma.	Not traced.
5	S. M.; 21 years; single.	Five mos., tumor; slight pain.	No.	Left externo-inferior; size of pigeon's egg; movable.	No.	Excision of tumor.	None.	Primary and by granulation.	23	Adenoma.	Not traced.
6	M. W.; 55 years; single.	Two years, painless tumor.	No.	Right interno-superior; size of lemon; movable.	No.	Excision of tumor.	None.	Primary and by granulation.	47	Myxoma.	Not traced.
7	C. S.; 24 years; single.	Three years, painless tumor.	No.	Left externo-superior; size of pigeon's egg; movable.	No.	Excision of tumor.	None.	Primary.	10	Fibro-adenoma.	Not traced.
8	M. M.; 23 years; single.	Four years, gradual painless growth of left breast.	No.	Left breast twice normal size; contains hard nodule.	No.	Excision of breast.	None.	Primary.	5	Fibroma.	Seventeen mos; no recurrence.

MALIGNANT TUMORS OF THE BREAST.

Number.	Name, age, condition.	Previous history.	Injury.	Physical examination.	Axillary involvement.	Operation.	Drainage.	Wound healing.	Days in hosp.	Pathologist's report.	Subsequent history.
1	M. W.; 37 years; married.	Eight mos. ago excision of right breast and axilla for carcinoma; 6 mos., recurrence.	No.	Two hard, small lumps right axilla.	2 glands.	Dissection axilla.	Rubber.	Primary and by granulation.	13	Carcinoma.	Died of recurrence.

Number.	Name, age, condition.	Previous history.	Injury.	Physical examination.	Axillary involvement.	Operation.	Drainage.	Wound healing.	Days in hosp.	Pathologist's report.	Subsequent history.
2	O. C.; 55 years; married.	Two years, tumor, growing rapidly, with pain.	No.	Right superior; 2½ in. in diameter; ulcer in centre; adherent.	Several glands.	Excision breast and axilla.	Rubber.	Primary and by granulation.	16	Carcinoma breast and axilla.	Four years and four mos., no recurrence.
3	M. M.; 50 years; married.	Left breast struck 18 mos. ago; tumor, 6 mos.; painful, 4 mos.	Blow, 1½ yrs.	Left 3-in. nodular tumor; interno-inferior; retracted nipple.	Enlarged glands.	Whole breast and axilla excised.	Two glass, one rubber.	Suppuration; complete in 3 weeks.	28	Carcinoma breast and axilla.	Not traced.
4	B. S.; 40 years; married.	Twenty-three years, painless nodule; increase with pain, 3 mos.	No.	Right externo-superior; retracted nipple; size of egg; skin involved.	3 tender glands.	Excision breast and axilla.	Rubber.	Mural hæmatoma; otherwise primary.	19	Carcinoma breast and axilla.	Recurrence and death 16 mos. after operation.
5	J. H.; 38 years; married.	Thirteen mos., painless nodule; removed 5 mos. ago; recurrence.	No.	Left interno-inferior; 2½-in. scar, with nodules; adherent.	Free.	Excision of tumor; 9 days later skin graft.	Rubber.	Primary where sutured.	19	Carcinoma.	Recurrence and death 16 mos. after operation.
6	A. S.; 31 years; married.	Seven weeks, slight pain.	No.	Left superior; 2-in. tumor; slightly movable.	Free.	Excision of tumor and half of breast.	No.	Mural abscess.	9	Carcinoma.	Recurrence and death 17 mos. after operation.
7	M. S.; 46 years; single.	Three years, nodule; larger and painful, 1 year.	No.	Right superior; hen's egg; skin involved.	Full of glands; 1 gland in left axilla.	Excision of breast, pectoral fascia, and axilla.	Rubber.	Mural hæmatoma.	13	Carcinoma.	Not traced.
8	W. De M.; 45 years; married.	Eight mos. ago amputation left breast for Paget's disease of 1 year's standing; axillary nodules, 4 mos.	No.	Left axilla full of enlarged glands.	Yes.	Dissection of axilla.	Rubber.	Primary.	4	Carcinoma.	Recurrence; death 19 mos. after operation.
9	S. D.; 54 years; married.	One year, slowly growing; painless.	No.	Left superior; movable.	Small glands.	Excision breast and axilla.	None.	Primary and by granulation.	18	Fibrous carcinoma.	Recurrences removed; well 3 years 8 mos. after 1st operation.
10	J. B.; 46 years; single.	Three years.	No.	Right externo-superior; adherent.	Small glands.	Excision breast and axilla, with pectoral fascia.	None.	Primary and by granulation.	31	Medullary carcinoma.	Six mos. later no recurrence.
11	A. B.; 49 years; married.	Mastitis 20 years ago; tumor, 6 mos.	No.	Whole right breast indurated.	Small glands.	Excision breast and axilla.	None.	Primary.	13	Carcinoma.	Not traced.
12	C. S.; 53 years; married.	Twice mastitis; 20 years ago, abscess; 14 mos., tumor; 4 mos. ago, tumor removed; 2½ mos. ago, tumor recurred.	No.	Left superior; nodules in cicatrix.	Enlarged glands.	Excision breast and axilla.	None.	Primary.	11	Carcinoma.	Not traced.
13	C. D.; 44 years; single.	Two years, left axillary tumor; 1½ year, tumor left breast, with pain.	No.	Left externo-inferior; adherent.	Mass size of egg.	Excision breast, fascia, and axilla.	None.	Primary and by granulation.	26	Carcinoma.	Not traced.
14	E. B.; 28 years; single.	Four mos., tumor, with pain.	No.	Right whole breast; adherent.	Several glands.	Excision breast, fascia, and axilla.	None.	Primary.	17	Carcinoma.	Recurred.
		One year later, recurrence.	No.	Nodules in scar; left whole breast adherent.	None.	Excision breast, fascia, and axilla. Excision of recurrent tumors in right breast.	None.	Primary.	14	Carcinoma.	Recurred; death 13 mos. later.
15	H. H.; 61 years; married.	Seven months previous, right breast and axilla excised; 2 mos., recurrent nodules in scar.	No.	Two hard nodules in scar, size of walnuts.	Third smaller nodule in axilla.	Excision tumor.	None.	Primary.	5	Carcinoma.	Recurrence; death in 11 mos.
16	M. O.; 58 years; married.	Five weeks, painless tumor.	No.	Right external; size of egg; movable.	Free.	Excision breast, axilla, and fascia.	None.	Suppuration.	6	Carcinoma.	Death in 6 days; acute septicæmia; pure cultures of streptococci grown from wound.
17	M. H.; 40 years; married.	Two years previous left breast and axilla excised; 8 mos., recurrence in cicatrix.	No.	Hen's egg.	Large nodule.	Excision tumors, axilla, and fascia.	No.	Primary.	21	Carcinoma.	1½ years later is reported dead; date unknown.

Number.	Name, age, condition.	Previous history.	Injury.	Physical examination.	Axillary involvement.	Operation.	Drainage.	Wound healing.	Days in hosp.	Pathologist's report.	Subsequent history.
18	S. S.; 48 years; married.	Serous discharge nipple, 18 mos.; ulcer, 1 year; 3 mos., pain.	No.	1½-in. indurated ulcer, left nipple.	Free.	Excision breast.	No.	Primary.	12	Epithelioma.	1½ years, no recurrence.
19	M. M.; 38 years; married.	Eighteen mos., blow; one year, tumor growing rapidly and with pain.	Yes.	Right externo-inferior; hen's egg; adherent to skin.	Small gland.	Excision breast, axilla, and pectoralis major muscle.	No.	Primary.	11	Carcinoma; axillary glands normal.	Seventeen mos., no recurrence.
20	I. S.; 45 years; married.	Seven mos., tumor; no pain.	....	Left; nipple retracted.	Several large glands.	Excision breast, axilla, and part of pectoralis major muscle.	No.	Primary.	12	Carcinoma breast and axilla.	Recurrence and death in less than one year.

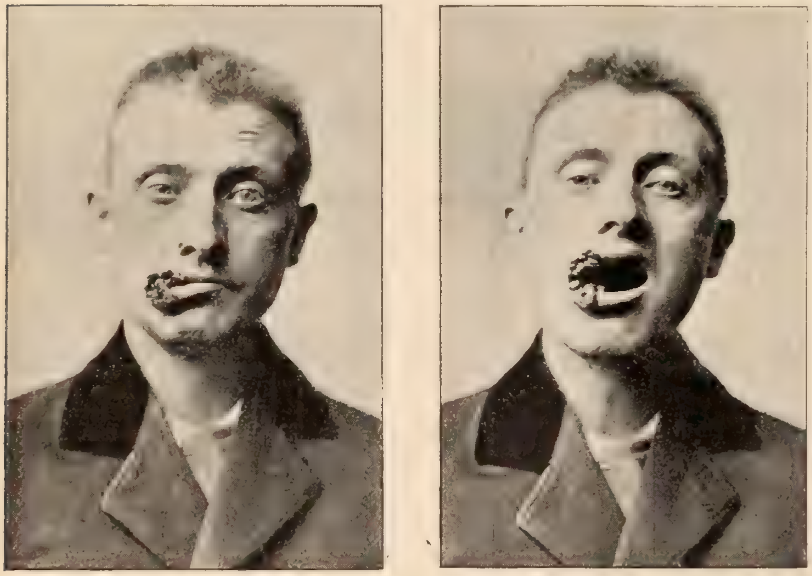


FIG. 15.

TUMORS OF THE LIP.

There were five cases of epithelioma of the lip. Three of these have been heard from. They were all recurrent cases. Two of the patients died within eight months after operation; the third is well, with no further recurrence after four years.

The epithelioma of the angle of the mouth shown in Fig. 15 occurred in the case of H. B., a man, aged thirty-nine years, a pipe smoker, with a history of syphilis. Five months before the photograph was taken a pimple appeared in the right angle of the mouth and was treated locally until it reached the dimension shown. The growth was freely removed and a search made in the submaxillary triangle for enlarged glands, but none were found. Five months later most of the ramus of the lower jaw on the right side was removed for recurrence, but the disease was already beyond attack, and three months later the patient died.

MALIGNANT TUMORS OF THE LIP.

Number.	Name, age, and sex.	Previous history.	Physical examination.	Secondary deposits.	Operation.	Wound healing.	Days.	Pathologist's report.	Subsequent history.
1	H. B.; 39 years; male.	Pipe smoker. Tumor, 5 mos.; painful.	Right angle of mouth involved.	None.	Tumor freely excised; incision in neck reveals no enlarged glands.	Primary.	15	Epithelioma.	Recurred 5 mos. later; 2 in. of inferior maxilla removed; death 8 mos. after first operation.
2	E. L.; 46 years; male.	Two years ago excision right angle of mouth; 4 mos. ago recurrence. Neuralgia supramaxillary nerve.	Right inferior maxilla swollen; skin adherent.	No.	3 in. bone and accompanying soft parts removed.	By granulation.	24	Epithelioma.	Not traced.
3	I. S.; 30 years; male.	Epithelioma of lip, with recurrences; removed in N. Y. H., 18, 13, 12, and 7 mos. ago.	Hard nodules in all scars of former operations.	No.	Excision of new growths.	Primary.	8	Inflammatory tissue; no epithelioma.	Four years later no recurrence.
4	F. G.; 63 years; male.	Pipe smoker. Ulcer, 5 mos.; nodule under jaw, 4 mos.; lip excised 2 mos.	Gland by jaw and under chin.	Yes.	Excision of 1½ in. of inferior maxilla and implicated soft parts.	Primary.	5	Epithelioma.	Recurred; death 6 mos. after operation.
5	J. M.; 62 years; male.	Pipe smoker. Tumor, 1 year.	One-inch ulcer.	No.	Tumor freely excised.	Primary.	5	Epithelioma.	Not traced.

TUMORS OF THE MOUTH.

There were eight cases where the malignant growth commenced in some part of the mouth. In three of these the tongue was affected, and from one half to two thirds of this organ was excised. Two of these cases are without recurrence fourteen and eighteen months later. The third one could not be traced.

MALIGNANT TUMORS OF THE MOUTH.

Number.	Name, age, and sex.	Previous history.	Physical examination.	Secondary deposits.	Operation.	Wound healing.	Days.	Pathologist's report.	Subsequent history.
1	S. B.; 57 years; male.	Six mos., sore tongue.	Left border tongue indurated and ulcerated; poor health.	6 weeks, gland under jaw.	Lingual artery tied; left half tongue excised.	By granulation.	9	Epithelioma.	Not traced.
2	M. B.; 42 years; female.	Eight years, tumor.	Pedunculated growth from left upper alveolus.	No.	Excision of tumor.	By granulation.	2	Fibrous carcinoma.	Not traced.
3	G. M.; 71 years; male.	Eighteen mos., tumor.	Inner surface right cheek a raised growth 1 in. across.	No.	Excision of tumor.	Erysipelas.	6	Epithelioma.	Death in 6 days of erysipelas.
4	W. M.; 63 years; male.	Eleven mos., ulceration from ill-fitting plate.	Posterior part right hard palate; ulcerating growth, $\frac{3}{4}$ in. across.	Cervical glands, 4 weeks.	Excision of tumor and bony connections, with several enlarged glands.	By granulation.	15	Epithelioma.	Recurrence and death in 6 mos.
5	J. O.; 55 years; male.	Five years, growth inside right cheek.	Ulcerating growth inside right cheek, 2 in. across.	2 cervical glands.	Excision of tumor and glands.	Primary and by granulation.	27	Epithelioma.	Fistula through cheek at discharge; not traced
6	G. Q.; 36 years; male.	Two years, ulcerating growth; cauterized; 6 mos. ago tumor excised.	Tumor attached to right inferior maxilla.	Sublingual and lymphatic glands enlarged.	Excision of tumor, whole right horizontal ramus of jaw, and glands.	Primary.	12	Epithelioma; sublingual gland not affected.	Recurred, and one year later again removed, Nov. 5, 1894.
7	M. G.; 40 years; female.	Wart left side of tongue since childhood; painful and growing, 4 mos.	$\frac{1}{2}$-in. elevated ulcerated growth.	No.	Left anterior half of tongue excised.	Primary.	9	Epithelioma.	Eighteen mos. later, no recurrence.
8	B. L.; 59 years; male.	Two years, tumor; ulcerated and painful.	$\frac{1}{2}$-in. ulcer right hard palate.	No.	Excision of tumor and neighboring bone.	By granulation.	8	Carcinoma.	Not traced.
9	H. B.; 27 years; female.	One year, painful tumor	One-in. ulcerated growth right side of tongue.	No.	Excision two thirds tongue after tying both lingual arteries.	Primary.	19	Epithelioma.	Fourteen mos., no recurrence.

TUMORS OF THE FACE.

Nine cases are included under this heading. Four of them only could be traced, and three of them had not recurred in a year and a half, three years, and three years and a half—a very favorable showing. The one case which is known to have recurred is a tumor of the external ear, which grows slowly, and has been removed three times. Microscopically, it shows the structure of fibroma. All of the other cases were epitheliomata excepting one (No. 7), that of E. W., a man, aged sixty-four years. For eight years he had a superficial growth beneath the angle of his right eye, growing slowly without pain. It was not ulcerated, not adherent, and easily removed. A Thiersch skin graft from the patient's arm covered the wound. It adhered perfectly, but shrunk a little so that a margin of granulation was left on one side. The photograph (Fig. 16) was taken at that time. Epithelium rapidly covered this defect. The tumor proved to be of a fibro-sarcomatous type. Nearly four years later there is no recurrence. The skin graft is perfectly pliable, has nearly as good sensation as the surrounding skin, but is plainly noticeable, as it has remained almost without pigmentation, and particularly when the face is flushed the skin graft looks like a patch of vitiligo. A similar result occurred in the case of R. H., a man, aged forty years, from whose nose an ulcerating epithelioma was removed, and a skin graft from the arm applied. A year and a half later the graft was still conspicuous in spite of frequent exposure to the weather.

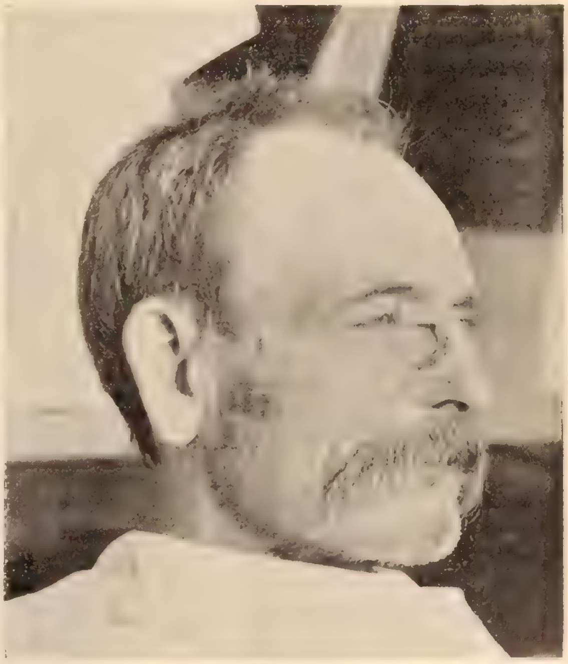


FIG. 16

MALIGNANT TUMORS OF THE FACE.

Number.	Name, age, and sex.	Previous history.	Physical examination.	Secondary deposits.	Operation.	Wound healing.	Days.	Pathologist's report.	Subsequent history.
1	S. H.; 68 years; male.	Seven mos, tumor.	¾-in. ulcer left side bridge of nose.	Slightly enlarged gland under left lower jaw.	Excision of tumor; skin grafts.	Primary.	8	Epithelioma.	Not traced.
2	L. F.; 66 years; male.	Epithelioma face; removed 5, 2, and 1 years ago.	One-in. movable tumor over malar prominence, with sinus.	None.	Excision of tumor.	By granulating.	4	Epithelioma.	Not traced.
3	R. McC.; 48 years; female.	Three mos., tumor to left side nose.	Left nasal passage occluded; small ulcer; surrounding induration marked.	None.	Excision of tumor, which fills the antrum and its bony attachments.	Primary and by granulation.	9	Epithelioma.	Deceased, date unknown.
4	A. B.; 73 years; male.	Six years, tumor; 2 years, removed; 1½ year, recurrence.	¾-in. ulcerating growth left side of nose.	None.	Excision of tumor; wound covered by a skin flap.	Primary and by granulation.	7	Epithelioma.	Three years, no recurrence.
5	C. S.; 67 years; female.	Six mos., tumor.	Ulcerating growth left side bridge of nose.	None.	Excision of tumor; skin graft.	Primary.	6	Epithelioma.	Not traced.
6	R. H.; 40 years; male.	Pimple for many years; ulcerating and growing, 3 weeks.	One-in. ulcerated growth bridge of nose; movable.	None.	Excision of tumor; skin graft.	Primary.	9	Epithelioma.	Eighteen mos., no recurrence.
7	E. W.; 64 years; male.	Eight years, tumor.	Flat ¾-in. growth right side nose.	None.	Excision; skin graft.	Primary.	15	Round and spindle-celled sarcoma.	3¾ years, no recurrence.
8	G. McG.; 19 years; male.	Six years, tumor above left ear; twice removed.	Tumor in skin 1½ in. by ⅓ in.	None.	Excision.	Primary.	9	Fibroma.	Recurred; excised 11 mos. later; 1⅓ year after last operation is slight recurrence.
9	E. R.; 62 years; male.	Nasal polypi for years; 3 mos., pain and swelling left upper jaw.	Left cheek pushed out by a stony growth.	None.	Excision of tumor and major portion of superior maxilla by the Ferguson method.	....	..	Epithelioma.	Failed to react, and died 6 hours after operation.

TUMORS OF THE NECK.

A. Z., a man, aged thirty-five years (No. 3), had a spindle-celled sarcoma removed from the right side of his neck three years previous by Durante, of Rome. It recurred, obstructing deglutition and respiration and affecting his speech. At operation it was found so firmly adherent to all adjacent structures, including the larynx, the vertebræ, and the pleura, that a complete removal was an impossibility. A portion as large as a small orange was torn and cut away and the wound closed. It healed readily, but phonation was lost, probably from destruction of the recurrent laryngeal nerve. A second tumor of the right tonsil, as big as an egg, was not touched. In this condition the patient was given injections of bouillon cultures of erysipelas for four months, with slight reaction, but some diminution in the size of the tumors. At the end of this time he developed an attack of erysipelas which nearly cost him his life, but which produced an almost total disappearance of the tumors partly by sloughing, partly by absorption. In the four years which have now elapsed the remaining small nodules have shown no tendency to grow, and were it not for the injury to the nerves in his neck the patient might be said to be in perfect health. The power of phonation was in part recovered soon after he left the hospital, and has further improved with the shrinking of the tumors.

MALIGNANT TUMORS OF THE NECK.

Number.	Name, age, and sex.	Previous history.	Physical examination.	Secondary deposits.	Operation.	Wound healing.	Days.	Pathologist's report.	Subsequent history.
1	J. V.; 68 years; male.	Two years, tumor of larynx, with hoarseness; 3 mos., dyspnœa.	Tumor size of cherry attached to right ventricle of larynx.	None.	Tracheotomy; larynx split open and right half of thyreoid removed.	On the following day a large catheter was passed into the œsophagus through the wound, and liquids poured in; 4 hrs. later, heart failure.	..	Carcinoma.	Death in 30 hours.
2	J. C.; 52 years; male.	Tumor, 12 years; Bell's paralysis, 1½ years.	Tumor in right parotid, 3½ in.; fixed.	None.	Excision of tumor.	Primary and by granulation.	7	Epithelioma.	Not traced.

Number.	Name, age, and sex.	Previous history.	Physical examination.	Secondary deposits.	Operation.	Wound healing.	Days.	Pathologist's report.	Subsequent history.
3	A. Z.; 35 years; male.	Three years ago, excision of sarcoma; recurred.	Tumor in right neck, 3 by 5 in., fixed; tonsil size of egg.	None.	Tumor of neck fixed to all surroundings, including vertebræ; partly removed.	Primary and by granulation.	21	Spindle-celled sarcoma.	Recovery under erysipelas treatment; no recurrence in 4 years.
4	P. B.; 28 years; male.	Eight years ago tumor removed from below left ear; recurred 2 years ago.	Small nodule; skin adherent.	None.	Excision of tumor.	Primary.	6	Chondro-myxo-sarcoma.	Not traced.
5	I. C.; 15 years; female.	Two years, tumor following blow.	Tumor below right angle of jaw, size of hen's egg; movable.	None.	Enucleation of tumor.	Primary and by granulation.	9	Chondro-myxo-sarcoma.	Not traced.
6	H. G.; 50 years; male.	Four years, tumor; growing rapidly the past year.	Two-in. tumor of right parotid; hard, adherent.	None.	Excision tumor, which is attached to temporal bone; facial nerve passes through tumor, and is removed.	Primary.	42	Epithelioma of parotid and lymphatic glands.	Recurrence and removed 1 year later; death 3¼ years after the first operation.
7	H. S.; 75 years; male.	Twenty years, tumor; rapid growth for one year.	Hard, adherent tumor, size of lemon, at right angle of jaw.	None felt.	Tumor, portion of parotid and lymphatic glands removed.	Primary.	10	Carcinoma.	Recurrence and death one year later.
8	J. McK.; 62 years; male.	Nineteen mos. ago left submaxillary gland removed; epithelioma; excision; recurrence 7 mos. ago; 4 mos. ago recurred again.	Movable nodule, size of hickory nut.	None.	Excision tumor and 1 in. of jugular vein, as its wall was affected.	Primary.	7	Epithelioma.	Eighteen mos. later, living; extensive recurrences.
9	D. McM.; 31 years; male.	Nine mos., rapidly growing tumors.	Had tumor size of hen's egg behind right sterno-mastoid; smaller one left side.	......	Excision of tumors on both sides of neck.	By granulation.	22	Epithelioma.	Wounds completely healed soon after leaving hospital; death 6 mos. later; cause unknown.
10	W. R.; 47 years; male.	Five weeks, tumor, growing rapidly.	Hard mass size of lemon below right ear.	No.	Mass of glands along internal jugular vein removed.	Primary.	11	Myxo-sarcoma.	Six weeks later symptoms of pressure upon the brain.
11	A. C.; 35 years; male.	Twelve mos. previous a small tumor excised from under right side of jaw; recurred in 9 mos.	Hard nodule in scar overlying submaxillary gland.	No.	Tumor and a portion of submaxillary gland excised.	Primary.	6	Probably normal gland.	One year, no recurrence.

TUMORS OF THE BODY.

The second case in which erysipelas injections were used is No. 8. F. K., a girl, aged fifteen years; Chopart's amputation performed by Dr. Bull at the New York Hospital five years previous for spindle-celled sarcoma of the metatarsus. Two years later a Syme's amputation was performed by him for recurrence. On entrance to the hospital the stump contained a nodule as large as an egg, while in the popliteal space and extending into the muscles of the calf there was a metastatic growth as large as a child's head. The inguinal glands were greatly enlarged. A major portion of the popliteal tumor was removed, but its intimate association with the vessels and nerves rendered its complete separation impossible. The nodule in the stump was purposely left to test the value of the injections. The wound closed well, and at once the injection was begun of bouillon cultures of erysipelas cocci and prodigiosus bacilli rendered sterile by filtration. In a few weeks the tumor of the stump, the inguinal nodules, and the infiltrating masses at the knee, which it had been impossible to excise, were very much diminished without sloughing, and at present,

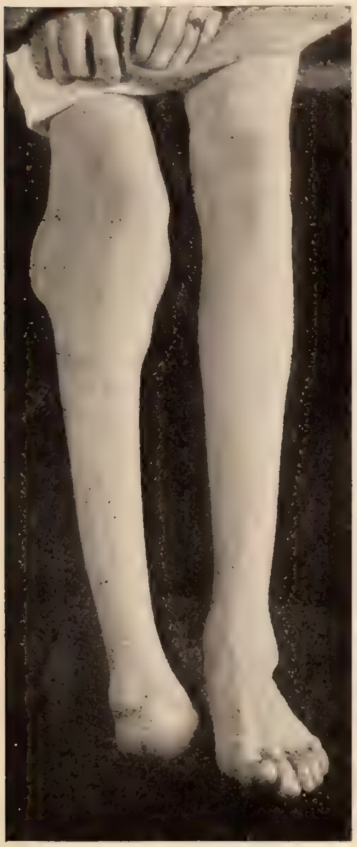


FIG. 17.

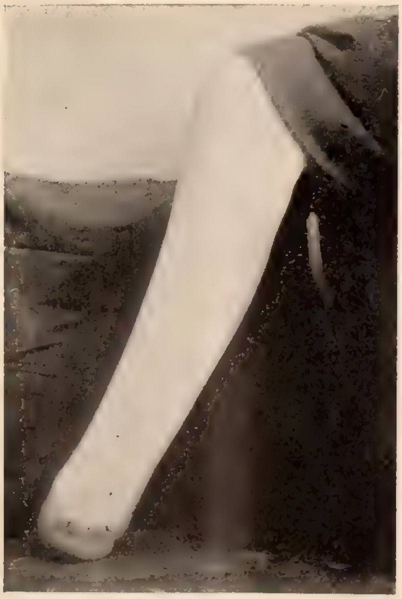


FIG. 18.

eighteen months later, the patient is in excellent health. One of the photographs (Figs. 17 and 18) was taken just before the excision of the recurrent nodule at the knee, the other ten months later.

For the report of these two cases of sarcoma and for one of the photographs, I am indebted to Dr. W. B. Coley, who had charge of the inoculations partly in the New York Hospital and partly outside.

MALIGNANT TUMORS OF THE BODY.

Number.	Name, age, and sex.	Previous history.	Physical examination.	Secondary deposits.	Operation.	Wound healing.	Days.	Pathologist's report.	Subsequent history.
1	H. D.; 63 years; female.	Thirty-five years, double inguinal hernia; 33 years, left side operated on and truss; 1 year had painful tumors.	Mass of glands in each groin; slightly movable.	No.	Excision of tumors.	By very slow granulation.	51	Carcinoma.	Cicatrization not yet complete at discharge.
2	J. R.; 55 years; male.	Ten mos., tumor.	Ulcerating growth over left scapula, 3 in.	Clavicular and axillary glands.	Excision of tumor.	By granulation.	40	Carcinoma.	Ulcer at discharge; death from recurrence in 14 mos.
3	M. E.; 52 years; female.	Three mos., tumor.	Ulcerating tumor of external genitals.	Inguinal glands both sides.	Excision of tumor and inguinal glands.	Sluggish granulation.	13	Medullary carcinoma.	Death in 13 days of slow sepsis.
4	M. D.; 62 years; female.	Two years, pain in left thigh; 1 year, tumor.	Hard mass left midthigh.	None.	Tumor, surrounding femoral vessels, is excised as well as possible.	Primary and by granulation.	26	Fibrosarcoma.	Went out with sinus; not traced since.
5	E. C.; 25 years; female.	A congenital growth removed 1 year after birth; recurred early; growth rapid last 4 years.	Hard nodular tumor whole crest right ilium.	None	Excision of tumor.	Primary and by granulation.	28	Spindle-celled sarcoma.	Not traced.
6	G. K.; 70 years; male.	One and a half years, slowly growing tumor.	Left scrotum and groin filled by solid tumor size of child's head.	None.	Excision of tumor with half of scrotum. It does not appear to enter inguinal ring.	Primary and by granulation.	7	Carcinoma testes.	Death from uræmia with suppression in 7 days.
7	J. H.; 48 years; male.	One year, rapidly growing tumor; 8 mos. ago, excision; recurrence.	Slightly movable tumor size of lemon under scar inner side left thigh.	Enlarged inguinal glands.	Tumor and glands excised.	Primary.	12	Myxosarcoma.	
8	F. K.; 15 years; female.	Five years ago, Chopart's amputation for sarcoma 4th and 5th right metatarsals; recurred; Symes's amputation 3 years ago. Nodule in popliteal space appeared 1 year ago; rapid growth.	Nodule in stump size of hen's egg; nodular tumor in popliteal space size of child's head.	In popliteal and inguinal glands.	Tumors dissected from popliteal space.	Primary.	184	Fibrosarcoma.	Under erysipelas injections, rapid improvement; good health 15 mos. after operation.
9	W. B.; 44 years; male.	Three years ago tumor removed from skin over inner surface of foot; recurred 6 mos. later.	Sloughing tumor, 10 in. in circumference.	None.	Excision of tumor, which does not implicate tendon nor bone.	Granulation sluggish.	45	Round and spindle-celled sarcoma.	Two weeks after operation leg amputated at lower $\frac{1}{3}$; wound suppurated and healed by granulation; recurrence in lungs, etc.; death 1 year after amputation.
10	R. B.; 38 years; male.	Five mos., tumor; rapid growth, with pain.	Mass upper half of sternum, 7 by 5 by 3 in.	Probably internal.	Portion of tumor excised. It was found to infiltrate the pleura.	Primary.	..	Myxosarcoma.	

The final results in these cases of malignant tumors which have been heard from since leaving the hospital are:

	No recurrence.	Death from recurrence.
Time unknown	0	3
$\frac{1}{2}$ to 1 year	1	5
1 to $1\frac{1}{2}$ year	3	8
$1\frac{1}{2}$ to 2 years	4	3
3 to 4 years	3	1
4 to $4\frac{1}{2}$ years	2	0
	13	20

Cases of internal malignant tumors of the abdomen and pelvis are not included.

Of the malignant tumors of the breast ten ended fatally of recurrence, all within two years; five were without recurrence at time of report; but only two of these had passed the three-year safety limit generally agreed upon. Horner* reports 17·7 per cent. recoveries over three years' duration; other German operators report somewhat lower figures: Billroth, 4·7 per cent.; Esmarch, 11·7 per cent.; Rotter, 12·1 per cent.; and Fink, 16·7 per cent.

(*To be continued.*)

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* *Beiträge zur klinischen Chirurgie*, Tübingen, 1894, xii, Bd. S. 647.

CERTAIN POINTS IN THE MEDICO-LEGAL INVESTIGATION OF GUNSHOT WOUNDS.

EXAMINATION OF WEAPON, BODY, AND SURROUNDINGS.

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MEMBER OF THE MEDICO-LEGAL SOCIETY OF NEW YORK.

THE condition of a weapon with which any shooting which may become the subject of a judicial investigation has been done should be carefully studied, as it may throw much light upon the case. Its position should be noted, and care taken to learn if it has been moved since its discovery. In two trials for murder I have seen the question of whether the weapon had been moved or not most fiercely contested, the point being of extreme importance in each instance. In the case of a deputy sheriff killed in Denver by a policeman while himself resisting arrest, as it was maintained, the relationship of the weapon to the position of the body was of importance in determining whether the deceased was resisting arrest at the time of the shooting or not. The evidence upon this point was of such a conflicting nature that the result of the contest was of less value than it might have been otherwise. In a case in Pueblo County, Colorado, 1895, concerning which Dr. Hubert Work consulted me, the discrepancy between the direction of the ball and the alleged position of the revolver at the time of the shooting was sufficient to overthrow the claim of accidental shooting, and the prisoner was convicted of manslaughter.

An accurate drawing of the surroundings is of great value, as in other cases of like nature. Walls, fences, and other surroundings should be carefully searched for bullet marks, unless every shot be positively accounted for. One of six shots in one of my cases must apparently have escaped from an open window or door, and the third shot in another case, neither of them being accountable for in any other way. The person of the one shot should be examined *in situ* if possible, to learn its relation to the bullet marks in the floor or walls, if such exist; to determine whether any staining by powder or burning by the gases of combustion exist, and to make certain in every way that a complete view of the case is obtained. The clothing requires particular care if one would avoid overlooking burning or staining, and especially if the fabric be of dark color. The adjacent region should be searched for pieces of wadding or the round wads used in shotguns, if the weapon used has been one requiring or making probable the use of a wad. The assailant has repeatedly been detected by the study of the material used for wadding, so that it should be carefully preserved. In these days of breech-loading guns and fixed ammunition the point is likely to be of less importance than when muzzle-loading arms were used and the wadding might be taken from paper or cloth in the possession of the one doing the shooting.

The amount of blood lost and its character, whether clotted or not, and the extent to which it has stained the clothing, should be noted. The direction of its flow may give valuable information as to whether the one shot has stood erect after being injured or not. Other appearances which may be of value in particular cases may also be found. It should be noted that it is not at all necessary that blood should issue from a fatal wound in sufficient quantity to stain the clothing materially, as the hæmorrhage is often almost solely internal. I have known a man to run eighty feet after a bullet wound which caused death from hæmorrhage in a short time, falling then from shock and loss of blood, but careful search failed to reveal a drop of blood upon the floor in the course which he had taken. I have many times seen animals and birds dead of internal hæmorrhage, after gunshot wounds, without the escape of sufficient blood to show through the hair or feathers, as the case might be.

The weapon may be grasped by the hand of the deceased, or it may have been placed in the hand with the purpose of deception. One should note the tightness of the grasp, for if held firmly it is almost certain evidence of suicide if the wound has come from that weapon.

The character of the wounds should be noted—number, size, direction, tattooing,* branding; the relation of the tattooing or branding to the wound, whether above, below, or to one side;† the direction in which the grains of powder have been driven under the skin if they are present, a point of vital importance at times; the number of grains of powder, if it be thought necessary to count them; whether the hairs of the part or the fibres of the clothing have been burned; and in face wounds, the eyes should be opened, to learn if the tattooing have involved the conjunctivæ or only the lids.

In investigating the course of the wounds in the body, the direction from which the ball has come may be shown, within certain limits, by the obliquity of the wound through the skin, as I have frequently observed, and as has been recently pointed out in the Farrar case by Dr. J. A. Mead, of Massachusetts.‡ One side of the orifice shows in such a case more marked staining and inversion than the others, showing that it has received a firmer impact from the missile causing the wound. This is upon the side of the acute angle. Indeed, if we make the angle sufficiently acute, we may merely cut a trench out of the integument, as I have seen many times in animals slain in the field and several times in the human subject. The position assumed by Dr. F. A. Harris, in the case just quoted, is certainly untenable. I have, in the presence of other physicians, at an autopsy, indicated the approximate course of the ball from a study of this feature alone before the wound was explored.

Projecting splinters of bone, or fibres of tendon or aponeurosis, dragged along in the course of the ball, or fibres of clothing carried in in the same way, furnish indisputable evidence of the direction in which the ball has passed through the body. The inversion of the wound of entrance, so commonly mentioned, and the eversion of the wound of exit are also valuable as evidence. In regions having much subcutaneous fat, however, the wound of entrance may be everted. I have, from such evidence offered in court, seen the dying declaration as to the direction from which he had been shot, of a man dying shortly after the attack, absolutely disproved, so that his attorneys abandoned the contention that he had been shot from behind. In a case where dispute is likely to arise over such a matter, it would be well to preserve, for instance, a portion of the bone through which the ball had passed, if possible to do so, as such an exhibit would furnish absolutely unanswerable evidence if shown to the jury.

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* Of the modifications in the color of the tattooing from the use of nitro-powders I have treated in the *Trans. of the Colorado State Medical Society*, 1892.

† In People *vs.* McLauthlin, Logan County, Colorado, 1890, the question of murder or accident hinged solely upon the location of the brand (see *Boston Med. and Surg. Journal*, August 14, 1890), and in People *vs.* Orns, Denver, Col., 1892, the same matter was of almost equal importance.

‡ *Boston Med. and Surg. Journal*, April 25, 1895.

Photographs of the wound I have found better than drawings, although in certain cases the latter have been invaluable.

It is well, before the trial, to test a weapon exactly similar to the one with which the shooting has been done, with similar ammunition, at different distances, in order to be better able to answer questions concerning the distances at which the brand or tattooing are to be found, at which hairs will be burned, or clothing fired, according as these things may be thought to have a bearing upon the particular case.

I have made it a custom to preserve the targets in such cases in order to show to the jury the exact results of the shooting—for example, at one foot, two feet, or any other distances of interest in the case, as well as the tattooing and brand. The latter are well shown upon white blotting paper, and I have found nothing better for the purpose.

The weapon, if loaded, should have the remaining loads as well as the empty shells, if it be a breech-loader, removed, that there may be no danger from it in the further examination. The cartridges and shells should be marked and securely kept by the proper authority. The size, make, calibre, number or mark, length of barrel, weight, and general condition of the weapon should be noted, and whether it be rifled or not, and hammerless or not. Any peculiarity of construction should be observed; thus, some of the newer revolvers are so arranged that accidental shootings are impossible under certain conditions where they might easily occur with other forms of weapon, the reason being that only when the trigger is pulled in conjunction with pressure upon a certain part of the handle can the arm be fired. The condition of the barrel and, if the weapon is a revolver, of its separate chambers should be noted, for the fact that they are clean or not may be of the utmost importance in determining whether the weapon has been fired, or fired more than once.

In examining the cartridges not only the manufacturer's mark should be noted, but whether the hammer has marked the primer, for such an indentation may show that an attempt has been made to shoot, but has been foiled by the non-explosion of the primer. I have known a man to fail to shoot an adversary merely because of such a miss-fire.

If separate bullets have been used, their exact size and weight must be taken, for the mere statement, for example, that a ball is of 0·45 calibre may be very far from covering the whole ground. It is possible to use many different styles of bullet in one revolver, or even cartridges made for a smaller weapon, as I have seen done, and it may be essential to establish that those remaining in the weapon are of the same size as those found in the person of the deceased. Even all bullets nominally of the same size are not of the same calibre. The various 0·32 calibre cartridges on the market vary in the exact calibre of the ball from 0·308 to 0·323 inch, while the weight runs from 46 to 250 grains, and the powder charge varies from 6 to 40 grains. The 0·38 calibre cartridges vary between even wider limits. Hence the general observation that a cartridge is either "long" or "short" should not be considered sufficient.

Sonnenschein mentions a case in which the finding of an unusual amount of antimony in the bullet assisted in fixing the identity of the shooter, which illustration will serve to show the importance of a minute examination of everything bearing upon the case.

Shot should be weighed and counted and their exact size determined.

It may possibly be of importance, in case a repeating arm has been used, to determine whether the cartridges have been carried long in the magazine, and this may often be settled by noting whether they have been battered anteriorly by coming in contact with the breech of the shell in advance. Soft lead bullets show such markings very distinctly if carried a short time in the field.

The sights of the weapon should be examined with care, especially to learn if they have become displaced or loosened. As the sights are detachable, it is perfectly possible that an accidental shooting may have occurred from a change in the position of one of them, as in the foolish attempts to shoot a pipe from one's mouth or an apple from the head. I have known many wild shots made at a target and at game from this cause, although they are more common from changes in the elevation of the rear sight. A professional friend tried a new rifle at a mark, at one hundred yards' distance, in order to see if it shot correctly. His negro servant, against the advice of the shooter, persisted in standing about five yards from the mark upon the log cabin to the right. The first shot imbedded itself in the wood just in front of the negro's head, the sights being utterly out of line, and causing a deviation of five yards in one hundred yards' distance. If the rear sight is elevated and the gun sighted at a near object, it will overshoot, while if the rear sight is displaced to the right or the front one to the left, it shoots to the right, and *vice versa.* It should be noted that a very slight movement of the sight is needed, in short weapons especially, to produce a considerable deviation in the course of the bullet. In connection with other points, these might be of much value in distinguishing a homicide from an accidental shooting.

The trigger pull, varying from almost nothing in guns with a set trigger to even twenty or thirty pounds in old muskets, should be noted, for it may make a great difference in the accuracy of aim possible with a given weapon. Many shooters pull a hard-shooting rifle to the right, even if using great care. In the case of the pistol, if the trigger pull is excessive, one may pull it entirely off the mark. Dr. J. T. Eskridge has recently communicated to me the details of a case in which a would-be suicide pulled the revolver so far to one side from the cause mentioned as to miss her head entirely in her attempt to shoot herself. She apparently lacked the determination to try it again.

In some revolvers the notch serving to hold the hammer at full cock is filed away, so that the weapon will not stay cocked, but is discharged either by raising the hammer and allowing it to fall suddenly with the thumb of the hand holding the stock or with the fingers of the opposite hand. The trigger is tied back in some cases to attain the same end. In my own practice I have seen the results of two accidental shootings from pulling the trigger in excitement in handling a double-action weapon, which does not require to be cocked, but is discharged by simply pulling the trigger. In one of the cases the revolver was discharged in the pocket of the owner while he was hunting for a man with whom he had quarreled, and the resulting wound prevented him from pursuing his antagonist further.

I once testified in court that a certain pistol with which a woman had been killed would not remain cocked, after having tried it several times to make certain of its condition. After the case had been given to the jury, in explaining the matter to a friend, I tried it again, and it remained at full cock. Although I tried it many times afterward, it did not do so again. In this case enough of the notch remained to hold it this particular time, although it could not ordinarily do so. Fortunately, the error was of no serious importance in this case, but if the weapon had been handled when cocked the slightest jar might have caused its discharge.

The examination of the place of the shooting should be conducted with such care that every material fact shall be established. A battered bullet must have been checked by some hard substance, which should be determined if possible. The bullets should be examined with the microscope, if necessary, for traces of blood, fragments of bone, fibres of clothing, or anything else of interest in the case, and the identity of each missile found should be established. One of my cases was markedly influenced by establishing the identity of a certain ball found near the body, it being proved by its battered appearance and the fact that woolen fibres were adherent to it that it must have caused a particular wound, and that therefore it must have been fired from the front and not from the rear, as charged in the dying statement of the man killed.

The places of impact of the different bullets should be carefully described, as well upon the walls of the room or surroundings as upon the body.

It is needless to go into the details of the conduct of the autopsy further than they relate to the bullet wounds, but it is perhaps well to caution the examiner to make certain that no other cause of death could have been operative, and to settle definitely, if possible, which wounds have been necessarily mortal and which bullets caused them. These points become of the utmost importance if more than one person is supposed to have participated in the shooting.

I know of no department of our professional work in which the minutest attention to details is of more importance than in these investigations, and none in which such attention is more certainly productive of good results when we are called to the witness stand.

TUBERCULOSIS OF THE UPPER AIR-PASSAGES.*

ÆTIOLOGY.

By JONATHAN WRIGHT, M. D.,

BROOKLYN.

I HAVE been asked to discuss that part of the subject of tuberculosis of the upper air-passages included under the heading of ætiology. This can not be successfully done without considering the ætiology of tuberculosis, to some extent, in its general aspect. That is a broad field which reaches out in all directions. Much of it is unexplored. Perhaps some of it is not accessible at present. Eight or ten years ago it seemed as though that tiny organism, the tubercle bacillus, filled the field completely.

Of late I have been looking back to my bacteriological days and wondering a little that we now hear no more of the three "postulates of Koch" which were so familiar to us then. They have not been heard of for so long that I have almost forgotten exactly how they were worded. As I remember them, however, they were that no micro-organism could be considered an ætiological factor in any disease unless—

1. It was always present in that disease.
2. It was never found in man without the disease.
3. Inoculation with it would always cause the disease.

These proud legends were inscribed on the banner of the "high contagionists." This is not the place to speak of the history of the researches into the activities of other disease germs than the tubercle bacillus, but suffice it to say that in that history also may be observed the downfall of the postulates. As regards the tubercle bacillus, it is now always present in tubercle, somewhat on account of similar tactics to those used by Mohammed with the mountain. The old clinicians had been in the habit of calling many things tubercle, but the new bacteriologists ruled out all those pathological structures not due to the action of the bacillus. And this has proved a great gain in clinical classification, but, like all classifications in medicine, it has wrought some evil in crystallizing a certain order of mental process into a form of intellectual non-receptivity which renders further advance in individual cases impossible.

As to the second postulate, it has disappeared so completely that hardly any traces of it can be found in contemporary medical thought. The tubercle bacillus is found not only dormant in animal tissues, entangled in the meshes of lymph glands and in unsuspected foci in the lungs, but it has lately been found, as has the diphtheria bacillus, in the upper air-passages of healthy people.

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* Read before the American Laryngological Association at its seventeenth annual congress.

It must have occurred to many others as well as to myself that the principal reason it has not been found before, and is not now found more frequently, is the difficulty of technique attending its demonstration. This suspicion is strengthened by a very suggestive bit of medical news that comes from Paris by way of the *Lancet* of May 11, 1895 (p. 1220):

> *Latent Tuberculosis of the Tonsils.*—Professor Dieulafoy calls attention to a torpid variety of pharyngeal tuberculosis the favorite seat of which is the adenoid tissue of the nasopharynx. This tuberculosis manifests its presence by an exuberant growth of the lymphoid organs of that region—in other words, by hypertrophy of one or more of the palatine and pharyngeal tonsils. This view of Professor Dieulafoy would, if confirmed, lead us to regard hypertrophy of the tonsils and adenoid growths as, in many instances, cases of tuberculous overgrowth of adenoid tissue. He bases this belief on the results of inoculations practised on guinea-pigs of fragments of enlarged tonsils and adenoid vegetations. Of sixty animals thus inoculated with tonsil tissue, eight, or thirteen per cent., succumbed to generalized tuberculosis, while of thirty-five inoculated with adenoid tissue, seven, or twenty per cent., became tuberculous. In all the persons who furnished the material for inoculation (enlarged tonsils and adenoid growths) the pharyngeal tuberculosis was primary and not consecutive to the pulmonary variety. It is to be supposed that the young subjects who have enlarged tonsils, etc., provide a favorable soil for the growth of the bacillus of Koch, which finds access to the adenoid culture medium either with the food, milk especially, or with the air respired (sojourn in a bacillary atmosphere). Professor Strauss, of Paris, has, indeed, demonstrated the presence of virulent tubercle bacilli in the nasal cavities of individuals habitually breathing the same air as phthisical patients. An open wound is not necessary for penetration, since the bacilli can find an entrance through the epithelium. In some instances the bacilli present in the adenoid tissue are, after a sojourn of months or years, destroyed by phagocytosis, which determines an indurating, fibrous process in the tonsil. In other cases, however, the bacillus finds its way into the lymphatic vessels, and enlarged submaxillary and cervical glands are the result. This lymphatic infection is often started by the occurrence of measles, scarlet fever, whooping-cough, etc. This glandular tuberculosis may, in its turn, remain local, and finally end in recovery; but in other instances rapid generalization may result. The third stage of tonsillitic tuberculosis is the spread of the process to the lungs, the bacillus reaching those organs from the cervical glands via the lymphatics, thoracic duct, and the right heart. In the course of the discussion raised by this most interesting communication M. Chauveau stated that in animals fed on tuberculous matter infection may take place by inoculation of the adenoid tissue of the base of the tongue and the isthmus of the pharynx, this inoculation being proved by the swelling of the cervical and submaxillary glands. Sometimes a minute erosion explains their inoculation, but often the surface was found intact.

I have read this extract in its entirety, but it is too early, without having seen the original paper of Dr. Dieulafoy, to make any comment on the subject beyond saying that, although Lermoyez has reported two cases of tuberculosis following operations for post-nasal adenoids, we are not accustomed to expect any such result either from an adenotomy or from an amygdalotomy. I only quote it here to show how far we are from the second postulate mentioned above.

Now in regard to the third article in the early bacteriological creed. It has been invalidated somewhat indirectly by the general trend of facts recently ascertained such as I have just instanced. It is doubtless true that a Pravaz syringeful of broth swarming with tubercle bacilli will kill *any* guinea-pig. It is very likely true that it will kill *any man*, though direct evidence on that point is lacking, but clinically a Pravaz syringe thus used does not enter into the ætiology of tuberculosis.

I need not pursue ancient history further. Indeed, some of you are doubtless already saying that I am setting up men of straw for the pleasure of knocking them down. Until lately, however, they were not thought men of straw, and I have taken these early postulates as an excuse to place before you a little of the evidence which we have clinically and experimentally, that the tubercle bacillus, although being the "*sine qua non*" of tuberculosis, is after all practically, especially from a prophylactic or hygienic point of view, a minor element in its multitudinous ætiological factors. I think we are gradually approaching a belief that every one at some time in his life comes in contact with such a dose of the tubercle bacillus that, were the other ætiological factors also present, he would die of tuberculosis. We know that one in seven deaths are due to tuberculosis. The autopsy table has shown that in one in two or three of all the cases examined there is evidence discoverable of the active or the conquered onslaughts of the bacillus. Now there *must* be a good many other cases in which the tubercle bacillus has perished without leaving a trace behind him—on the skirmish line as it were.

Cornet showed a good while ago the high rate of mortality among those confined in prisons and workshops from tuberculosis, and he reasoned that it was because of the contact with the tubercle bacillus.* I need not follow the history of clinical and experimental investigations which make us now believe that the high mortality is due not to the bacillus, but to the prison and workshop. It has been conclusively shown that no higher mortality exists among the consorts of tubercular patients than among other husbands and wives, but the page of every clinical history book will show a different story where the children of such patients are concerned. Is the death-rate of tuberculosis strikingly high among doctors? Is it the impression of the members of this association that more than one in seven of our *confrères* die of tuberculosis?* In the hospitals and dispensaries and in our offices we meet the tubercle bacillus face to face every day. It is gradually becoming known that a very large proportion of all dairy cows, especially of the Alderney breed, are tubercular. It is the children of the well-to-do, if not of the rich, that are brought up on this milk. The poor suckle their children themselves. It is hardly necessary to ask among which class we find the largest proportion of tubercular children. This fact has been noted for years, and so far as I have observed has never been satisfactorily explained by the "high contagionists."

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* Since this was written, I have lately seen that Cornet has reiterated his belief, though not quite so emphatically. He said in a paper read before one of the German medical societies that the mortality from phthisis had fallen greatly since the institution of precautions recommended by him against infection from tuberculous sputum. In the discussion which followed, Baer rather spoiled the force of this remark by expressing a doubt as to whether the mortality from phthisis had diminished on account of these precautions or because of the general reform in furnishing the prisoners with better air, food, and exercise. For a very strong plea for the side of the question opposing the views I have expressed here, see Cornet's paper and the discussion in the *Berl. klin. Woch.*, May 20, 1895.

Experimentally Prudden has shown that he can produce a lesion identical with tubercle without the action of the *living* tubercle bacillus, and a French author has said *inversely:* "The bacillus is not enough, we must have the characteristic reactional lesion—the tubercle." As clinicians we may say, and we should say it boldly, that neither the tubercle nor the tubercle bacillus, nor both together, are enough. The tubercle bacillus is at one end of the chain and the tubercle is on the autopsy table at the other end of it. Tuberculosis to us does not mean either of these. It means to us both of these, plus the vital energy of the bacillus on the one hand and that of the resisting human organism on the other.

We group all the other factors in the general ætiology of tuberculosis under the head of "predisposition," divided into such vague terms as low vitality, heredity, scrofula. And apropos of scrofula, before leaving the subject of general ætiology for that of the special ætiology ef tubercular disease of the nose and throat, I desire to quote some words of Ziegler (*Allgemeine Pathologie*, etc., 8te Auflage, Band i, S. 614):

"According to our experience, the disposition to tuberculosis is in the human race a greatly varying one, since only a part are predisposed to it. According to current views, scrofula—*i. e.*, a sickly condition of the organism, which is revealed by a tendency to certain disturbances of nutrition of the skin, of the mucous membranes, of the joints, of the bones, and of the lymph nodes—predisposes to it. It may here be remarked that many of the manifestations which are ascribed to *scrofula are really already manifestations of a tubercular disease.*"

Of course, in these few remarks I have not pretended even to touch on all the points in the general ætiology of tuberculosis, but have only hinted at some of them, and we must now consider those special influences which determine its primary and especially its secondary location in the upper air-passages.

There are certain facts which seem clearly to indicate that there exists in the nose and throat some special local resisting power exerted against the entrance of the tubercle bacillus, or that there exists some special local annihilating influence upon the bacillus after it has gained an entrance into these mucous membranes. If we are not disposed to deny the possibility of a really primary occurrence of tuberculosis in the larynx, we are certainly not in a position to deny that even its apparent occurrence is an extremely rare clinical phenomenon. Supposing that the inspired air is the bearer of tubercular infection to the lungs, the conclusion inevitably follows that the nose and throat, as compared to the lungs, must possess a more complete protection, for elsewhere I have shown experimentally that the former retain from the inspired air all but a fraction of the floating germs before they reach the bronchi. Were it not for some protecting factor, primary laryngeal tuberculosis should be at least as common an occurrence as primary pulmonary tuberculosis.

Krückman* has lately shown, by a large number of very carefully conducted examinations, that in adults the tonsils and cervical glands are usually infected by the tubercle bacillus *after* the lungs are the seat of disease.

On the other hand, in children, he seems to believe, and we know that clinical evidence goes to show, that the cervical lymphatics are usually affected before the pulmonary portachyma. Supposing, however, that the tubercular infection is carried by the lymphatics in both adults and children, we reach the same conclusion of comparative laryngeal immunity when we remember how extremely rare tubercular laryngitis is in children.

Now what are these protective factors in the upper air-passages? So far as lymphatic channels of infection are concerned in the larynx, we may advance the explanation of the scanty anastomosis of the internal and external vessels. We have a clinical evidence of this in the late stage at which enlarged cervical lymphatics are discoverable in the cases of laryngeal cancer, but this will not explain the pharyngeal immunity.

If Dieulafoy's recent observations are reliable, we may explain by them the origin of some of the cases of tubercular meningitis in children, for there is direct and abundant communication between the naso-pharyngeal and the intracranial lymphatics, but these observations, if accurate, throw no light on the cause of comparative immunity of the nose and throat in children to recognizable tubercular lesions, but on the contrary would make it more apparent, for I imagine it will be shown that lymphoid tissue is not the product but the lurking place of the tubercle bacillus.

The same reasoning applies when we remember the fact that only fifteen to thirty per cent.† of all cases of pulmo-

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* Dr. Kortright, in the *Brooklyn Medical Journal*, June, 1895, says that statistics prove that the doctors do not average as high a mortality from phthisis as other classes in the community.

* Krückman. Virchow's *Archiv*, No. 138, Heft 3, p. 534. I also desire to call attention to the paper published by Sims Woodhead in the *Lancet*, October 27, 1894.

† Heinze is the only author who goes as high as fifty-one per cent. It must be remembered that these are statistics from the autopsy table, and these must differ materially from what is observed laryngoscopically for three reasons: Firstly, and chiefly, comparatively few persons dying of phthisis have ever had a laryngoscopic examination. Many tubercular lesions of the nose and throat exist without symptoms referable to them. Secondly, many tubercular lesions may escape observation even in the most thorough rhinoscopic and laryngoscopic examination. Thirdly, many tubercular ulcers appear in the upper air-passages only when the patients are "*in extremis.*"

Through the kindness of Dr. Arrowsmith and of the other attendnary tuberculosis, even at autopsy, are seen to be also victims of laryngeal tuberculosis. As said before, all cases should present laryngeal lesions, were there not some protection against the virulent cultures of the bacillus in the sputum which bathes the larynx.

I do not propose to go into the history of the literature of laryngeal tubercular infection. You are all familiar with the old theory of Louis as to the corrosive action of the sputum. It occurs to me that the chief objection to Louis's doctrine, as he meant it, is that no one has yet shown that sputum from tubercular lungs possesses any chemical erosive properties. You know that Eugen Fraenkel has demonstrated the tubercle bacillus in the surface epithelium and in the superficial layers of the mucous membrane. This has not been confirmed by many of the workers at the problem, but lately has been corroborated by the investigations of Mr. Lake, published in the April number of the *American Journal of the Medical Sciences* for 1895. He says, however, that the pyogenic cocci first make a breach by getting in between the epithelial cells and, multiplying there, form little abscesses which result in superficial erosions through which the tubercle bacillus itself enters, it having been shown that the bacillus itself is unable to produce abscesses. It is not necessary here to discuss Friederich's idea that the pneumogastric, in some cases of pulmonary phthisis, by becoming affected produces a trophic lesion in the larynx which allows the tubercle bacillus to enter.

I must, however, refer to an excellent paper by Thost,* who claims that the bacillus frequently enters by way of the glands, in whose epithelium he claims that tubercle frequently develops. This, however, is strenuously denied by Fraenkel. It is well to remind you here that Virchow long ago cited the larynx as the situation where typical tubercle structure could best be studied microscopically.

For several years I have been in the habit, when opportunity offered, of making sections transversely through the trachea and larynx of stillborn infants or of those dying shortly after birth. I had frequently noticed that the epithelial layer in these transverse sections had a wavy outline—that it was thrown into folds; it seemed too redundant as a lining for the tube. In the larynx this is especially noticeable in the interarytænoid space. At first I supposed these folds were due to the shrinking from prolonged soaking in alcohol. Lately, however, I have examined specimens prepared by preliminary fixing in four per cent. formalin, and the same phenomenon is observable, as you see in this drawing of a section from just below the vocal cords by camera lucida and a low power (Zeiss A) objective (Fig. 1).

If you will examine the beautiful photographs made by Prof. B. Fraenkel † of similar sections in adults, you will note the same appearance. Both in adults and infants, and also in animals (I have sections of pigs' and calves' and kittens' larynges), it will be seen that the epithelial and subepithelial layers are connected by very loose areolar tissue with the underlying firmer fibro-elastic connective tissue and perichondrium of the air tube. Now this evidently subserves a very important physiological function, and one which has a direct bearing on our subject. When a child screams, when a stentorian street hawker shouts his wares, when a consumptive has a paroxysm of coughing, the air tube is put on the stretch, the fibro-elastic elements may dilate by the shortening of the trachea as the thorax is heaved up, but the epithelial layer would suffer constant damage were it a "tight-fit" lining. The greater part of the epithelium is columnar. These long, narrow cells lie side by side, with their ends pointing outward toward the enemy. Were there no folds to be smoothed out like an accordion pleat, those cells at some one or more points must be dragged apart whenever the air tube should be violently distended.

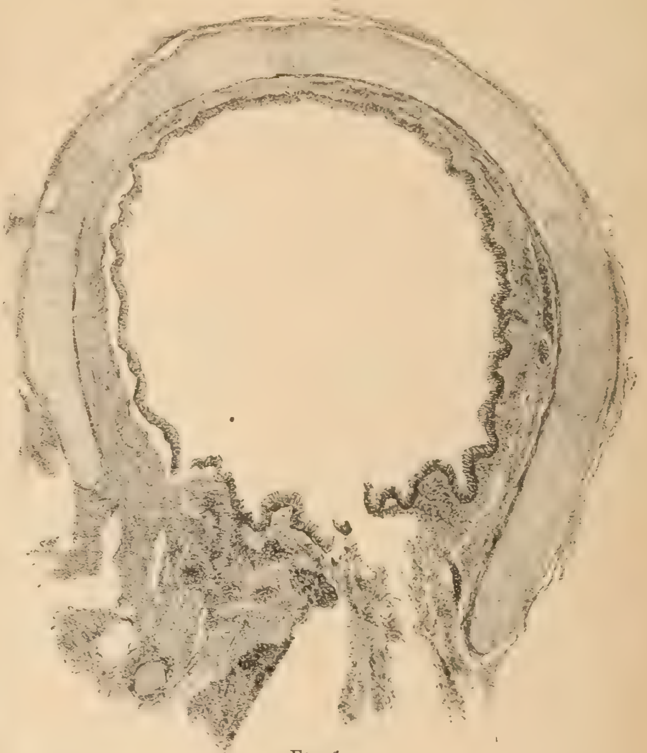

FIG. 1.

In adults these folds are less marked than in children; the areolar tissue binds the epithelial layers more firmly to the walls. Every attack of laryngitis tends to damage this physiological arrangement by stiffening the subepithelial structure and by hyperplasia of the epithelial cells. Much more must this be the case in chronic inflammations, where we also find some metamorphosis of the columnar into the squamous type of epithelium. This latter is especially seen in phthisis on the posterior laryngeal wall. E. Fraenkel states that the base of the arytænoid cartilages at the internal and opposing faces of the vocal processes, where rubbing occurs during phonation, is the most frequent site of beginning laryngeal tuberculosis.

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ing physicians, I have been able to examine twenty-five patients in the Brooklyn Home for Consumptives, all of them suffering from the lesions of the second and third stages of pulmonary phthisis. In only four of these, or sixteen per cent., were tubercular lesions found in the nose and throat.

* *Monatschr. f. Ohrenheilk.*, No. 2, February, 1893.

† B. Fraenkel. *Archiv für Laryngologie*, Band i, Heft 1 and 2.

This may possibly be true of ulceration, but my clinical experience disposes me to think it is the interarytænoid space. That situation at least is surely the place in which we first see that heaping up of pearly epithelium which is so significant to the experienced laryngologist.

After this study of physiological and pathological processes we are prepared to admit many of the causes to which are usually ascribed the supervention of laryngeal upon pulmonary tuberculosis—low vitality, the paroxysmal cough, the mechanical rasping of the sputum against the laryngeal walls, especially at the posterior commissure, repeated attacks of acute laryngitis or the presence of the results of chronic laryngitis, the overuse of the voice, exposure to cold and dusty winds, etc.

Tubercular ulceration of the pharynx is usually seen only in the very last stages of pulmonary and laryngeal phthisis, when the systemic and local vitality is at a low ebb, or in acute miliary tuberculosis when we have apparently some sudden weakening of the special factor which protects the system ordinarily from the ravages of the tubercle bacillus. Most of the cases of nasal tuberculosis which I have seen have been due to this low vitality at the end of pulmonary phthisis, and those cases of tubercular tumor which I have read of and not seen are apparently due to the abrasion of the finger-nail or to some other traumatism, as they are mostly reported as occurring anteriorly on the sæptum or on the anterior ends of the turbinated bones.

There is no more time at my disposal to enter into a discussion of the question of the spread of tuberculosis by means of the lymphatics and blood-vessels. While it seems apparent that the method of infection is usually from the external surface through a gap in the epithelium, it can not be denied that the larynx is theoretically just as apt to be affected (barring the scantiness of the lymphatics) by means of the lymph and blood vessels as are the knee and hip joints; and practically there are many clinical and morphological facts which go to sustain its actual occurrence in many cases.

CANCER OF THE PANCREAS.

By EDWIN R. MAXSON, M. D., A. M., LL. D.,
SYRACUSE, N. Y.

Malignant disease of the pancreas, though obscure at first, should generally be diagnosticated before it has advanced very far.

Two cases have fallen under my observation, in one of which the disease involved the pleura, lungs, and kidneys; while in the other the pancreas appeared to be the only local manifestation of the disease.

Both patients were men past middle life, and, though only called in consultation, I discovered diagnostic symptoms in both cases which led to a correct diagnosis, as the post-mortems revealed.

One of these cases occurred in Jefferson County, New York, in the person of a man, aged about sixty years, of a fair constitution, apparently, and good habits; a farmer in a healthy locality.

The early symptoms, as I learned them from one of the several physicians that had attended him, were rather negative than otherwise. There was a steady decline, and by degrees he became weaker, losing flesh without any apparent satisfactory cause to those who examined him. And as he took a reasonable amount of food, suffering little or no pain, there appeared to have been a favorable prognosis through the early period of his decline.

Later, after various negative opinions had been expressed as to what his disease was not, and as no positive opinion as to what it really was had been obtained, I was called to see and examine the patient with two or three of his previous attendants, as he had, though taking a reasonable amount of food, continued to lose flesh and strength.

As his appetite had become voracious, it was thought the more strange that his flesh and strength were steadily declining.

I was requested to discover and explain, if I could, any disease to account for his steady emaciation, and the unaccountable, overwhelming weakness that had persisted.

His countenance, though not icteric strictly, had a cachectic appearance which suggested to my mind, after excluding everything else, internal cancer; and as his appetite, though voracious, accepted with avidity any wholesome food without the least apparent preference as to taste, or even ability, apparently, to discriminate in that respect, it was an indication that the pancreas might be involved, thus perverting the appetite and accounting for the steady decline in his case.

In answer to the question propounded to me, as to whether I "discovered any disease about him," I suggested "internal cancer." To this his physicians rather assented, more readily, as they could offer nothing that appeared to them even more plausible when suggested. It was mutually agreed that such measures should be pursued in his case as would afford him the most relief, if his disease was thus malignant; and, if not malignant, would have the best chance of effecting a cure.

Still later other medical counsel was sought, as I learned, setting aside our opinions as erroneous; declaring the disease only dyspepsia, and giving great assurances of a permanent cure. But the emaciation and debility still went on, and in a few months he thus died.

Remembering my suggestion as to cancer, his decline not having been arrested by any treatment, and in view of his apparent approaching death, he requested his wife to have a post-mortem, and to invite all the physicians that had been interested in the treatment of his case to attend it.

This was faithfully carried out; and most of them were there—all but one, I believe, who was absent from home. One reason given by the dying man for requesting this was the hope of benefiting a son whom he regarded as like him constitutionally.

The post-mortem revealed scirrhous growths from the inner surface of the pleura, in the lungs, in the kidneys, and an utter disorganization of the pancreas by scirrhous degeneration, none of the others having passed on to that stage, and nothing else was found post mortem.

While the emaciation, debility, steady decline, and even a voracious appetite might attend other diseased conditions, the peculiar cachectic countenance points rather to cancer, and the loss of a discriminating relish or taste for food in these cases, with voraciousness, regarded as pathognomonic of malignant pancreatic disease, enabled me to make another correct diagnosis, as was proved by the post-mortem in the following case, which occurred in Ontario County, New York:

The patient was a man of about fifty, I think, under the care of two physicians, one of them an eminent surgeon. I was called in consultation and only saw the patient once, and, as in the other case, was requested to find, if I could, any diseased condition to account for the steady emaciation and decline, which had been much as in the other case, no clew having been arrived at for a diagnosis.

Excluding everything else, in view of the voracious appetite and the total perversion of relish or taste for food, eating and relishing one kind as well as another, together with the emaciation and overwhelming progressive weakness, without other symptoms of importance, or the marked cachectic countenance, I suggested and gave it as my unqualified opinion that the disease was cancerous degeneration of the pancreas, and that the patient would die of the disease, as he did a few weeks later; for at the post-mortem, which I attended by invitation, the only pathological condition found was a totally disorganized pancreas from cancerous degeneration.

In both these cases, so far had the disease progressed that the pancreas would readily fall into shreds on being handled, having evidently been failing as an aid to digestion in a gradually increased degree for several months, and totally so at last. Just how long this failure had been total in these cases it might be difficult to say, but it is probable that with this gradual failure there was developed the voracious and perverted appetite and taste or relish for food, as in all other like diseased conditions of the pancreas.

It may be proper to add in this connection that while these two cases only have fallen under my observation, and been thus confirmed by post-mortem examinations, I have learned indirectly of a third case, which perplexed the physicians in not being able to reach a satisfactory diagnosis, leading them to a post-mortem examination and to find cancerous degeneration of the pancreas; and, so far as I could learn through an intelligent third party, there was a development of symptoms corresponding with those of the two cases I have here related in the more essential particulars.

Treatment.—While advanced stages of this disease do not admit of a cure, and may not be greatly retarded by any treatment, pancreatin, judiciously administered, by changing albumin into albuminose, starches into glucose, and emulsifying fats, might palliate at least to a limited extent.

And as cancer is apparently a microbial affection, in addition to iodide of potassium, iron and nux vomica and the pancreatin, a bactericide, either phytolacca, Chian turpentine, resorcin, or other, might be given from the first not so much with the expectation of a cure, as with the hope of retarding the progress of this hitherto invariably fatal pancreatic disease, so far as I can learn.

818 MADISON STREET.

THE INFLUENCE OF

CHRONIC DISEASES OF THE THROAT UPON CERTAIN DEFECTS OF SPEECH,

ESPECIALLY STAMMERING.*

By D. BRYSON DELAVAN, M. D.

THE ordinary defects of speech in children suffering from hypertrophic conditions of the pharynx are sufficiently familiar. They are due, in part at least, to obstruction of the vocal resonating cavities, and are relieved more or less promptly when the normal patency of the parts has been restored. Those which depend simply upon the mispronunciation of consonant sounds are the most common, and it is unusual to find a child with any considerable amount of adenoid or tonsillar enlargement who can pronounce the letters *m* and *n* naturally, while certain other consonant sounds are also commonly a source of trouble. On the other hand, there are some consonant sounds, either single or double, mispronunciation of which is not usually attributed to pharyngeal disability. Thus, the combination "*th*" may be pronounced like "*s*," or the letter "*w*" like "*l*," and so on with various other examples. In a number of instances in which such patients have come under the observation of the writer, it has been noticeable that after the restoration of the normal patency of the pharynx, and return of the parts to a natural condition, these speech defects have disappeared, although no effort has been made to instruct the child or to call his attention especially to the correction of the evil.

In addition to the obstructive conditions due to lymphoid disease, there is another factor in these cases which is not so readily recognized as influencing the phonatory act—namely, the part which relaxation of the throat in general, and of the soft palate in particular, directly due to the organic troubles above mentioned, bears in producing these various classes of mispronunciation. That it may do so is beyond question and need not be further commented upon here. My intention, however, is to direct especial notice to its influence upon a totally different kind of vocal defect.

The precise physiology of the act of stammering has never been satisfactorily explained; more, perhaps, has been written upon the subject, with less profit, than upon most obscure affections. There can be no question that however central the disease may be as to its origin, and however largely a neurosis, it certainly is influenced to an important degree by the local conditions obtaining in the throat. Thus, among stammerers, it is a matter of common observation to find that they talk less fluently when tired, hungry, or ill. A person who may have almost entirely overcome the defect may find himself stammering badly at the onset of a cold attended with marked relaxation of the throat. These and many other conditions tend to suggest that relaxation of the throat may decidedly aggravate the habit of stammering. It goes without saying that the morbid conditions of the throat before alluded to are attended with marked relaxation. This is so pronounced in some cases as to cause a decidedly paretic condition of the soft palate. Reasoning from analogy, it would be fair to suppose that anything which would tend to remove relaxation and add strength and muscular tone to the phonatory muscles would be directly helpful in overcoming the stammering habit. Let it be at once disclaimed that the idea is held that all stammerers have diseased throats. This is emphatically not the case; there are many whose throats are to all appearance perfect; but among the class described, it seems fair to infer that attempts made to relieve stammering might be greatly assisted through the removal of the local disabilities. This, indeed, clinically has proved to be the case. In the experience of the writer, marked improvement in stammering has followed the removal of obstructive conditions and the relief of other irritating lesions. He has had the matter under observation now for a number of years, and during that time has had an opportunity to study several cases directly bearing upon the proposition, and, while in no case has the stammering been absolutely cured, in all cases a very marked and gratifying improvement has taken place, following shortly upon the performance of operations upon the throat successful in the relief of morbid conditions there. The subject is more important than would at first appear, for it will be seen that a patient sent to a vocal instructor for the relief of stammering may find his progress seriously impeded and the ultimate results of his course of instruction greatly impaired through persistence of his throat troubles, thus entailing disappointment to the pupil and discredit to the instructor in whose hands he may have been placed.

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* Read before the American Laryngological Association at its seventeenth annual congress.

I have thought it worth the while of this association, therefore, to bring before it the following proposition—namely, that in cases of stammering, especially in children, it is well to examine the throat, and, if disease exists there, to eliminate it before the patient is placed under instruction for the improvement of his vocal defect. This can work nothing but good to the pupil and ought to be a source of vast help and encouragement to the conscientious instructor, who can hardly find any reasonable ground for objecting to a course so evidently calculated to sustain and re-enforce his efforts. The suggestion herein contained was made some years ago by the late Emil Behuke. The fact that it appears to have escaped general notice is my excuse for bringing it forward.

In these cases, simple medical or surgical treatment of the throat is not all that is possible. Much can be done to strengthen a paretic or feeble soft palate, and to this end, under the advice of the physician, certain helpful exercises can be carried out. For instance, the application of the galvanic current to the soft palate, the systematic exercise of the organ by the pronunciation of sounds calculated to call it into activity, the old advice of causing the patient to blow through the closed lips—all these things may act as desirable aids. Frequent gargling with cold water has been suggested to strengthen the palate, and, in older patients, the head and falsetto tones are advised as being useful in exercising the levators of the palate and the superior constrictor of the pharynx, thus adding strength to them and placing them under the better control of the will.

COCAINE IN URETHRAL SURGERY.

By WILLIAM H. DUKEMAN, M. D.,
LOS ANGELES, CAL.

Every little while there appears in the current medical journals the report of unfavorable or alarming symptoms from the use of injections of cocaine in the urethra. From these reports I invariably learn that either too large a quantity of the solution was used or the solution (ten-per-cent. solution) was a much stronger one than was required. I also learn, by noting the symptoms recorded, that in many cases the symptoms have been rather those of a highly nervous outbreak in a nervous subject than to be attributed to the constitutional effects of cocaine.

Any surgeon having much to do with urethral surgery has noticed in some very modest and nervous patients the extreme prostration from shock on passing any instrument into the urethral canal, and much greater is this shock in these nervous patients after passing a urethrotome, even though the cutting has been very slight and no pain has been experienced. This I have noticed many times. I have used injections of cocaine in the urethra hundreds of times, but I have never but once observed any symptoms which I could absolutely lay to the cocaine. I have, however, never but once used a ten-per-cent. solution. Two cubic centimetres of a two-per-cent. solution is amply strong enough for the relief of pain in deep urethral operations, while in cases of internal urethrotomy of the distal end of the penile urethra not deeper than three inches I use a four per-cent. solution. In both cases the strength of the solution is ample to completely anæsthetize the urethra. The solution should not remain in the deep urethra longer than seven minutes at the utmost. Usually five minutes is long enough, while in the distal penile portion it will require seven to ten minutes to completely anæsthetize this portion of the urethra. It should be seen that the urethra is completely emptied of the cocaine solution by stripping it, so that there is no further or prolonged absorption. By observing these simple rules, and by using weak solutions, I have never since encountered nor seen any alarming or poisoning symptoms from the use of cocaine.

There are certain persons, however, who are very susceptible to the evil effects of cocaine, and, like morphine, it should be administered very cautiously for the first time. No one would ever think of giving a hypodermic injection of half a grain of morphine to a patient who never before had taken the drug. So, with cocaine, a ten-per-cent. solution is much too strong.

About ten years ago, at the urgent request of a druggist (on whom I performed internal urethrotomy), I injected one drachm of a ten-per-cent. solution of cocaine. He was of a very nervous temperament and very much dreaded pain. The solution was retained seven minutes. I noticed he looked pale, but thought only of his extreme dread of pain. On introducing the urethrotome he remarked he did not feel anything, not even the cutting of the stricture in the least. Immediately on my withdrawing the instrument, which was not more than twelve minutes from the time I injected the cocaine, he apparently fainted away for an instant, and remarked that he felt a numbness of the entire body. I now recognized that I had to deal with a case of cocaine poisoning. Not knowing of any antidote to cocaine, I treated the symptoms as they were presented. The pulse was quick, thready, and 140 in a minute. As the patient was conscious of his condition, I at once gave him a drink of whisky, and as soon as I could introduce a catheter the urethra and bladder were thoroughly irrigated. There were cyanosis, dilatation of the pupils, and shallow respirations, but the patient at no time was unconscious. He remained in this condition about twenty minutes, when he complained of cramps in his legs and bowels. For this a hypodermic of a quarter of a grain of morphine was given. In about ten minutes later he had greatly improved, and in about half an hour the alarming symptoms passed away. He, however, yet complained of a peculiar numbness over his entire body, but unlike the feeling produced by morphine; as he had taken hypodermics of morphine several times previously, he stated the sensation of numbness was nothing like that produced by morphine. He remained, however, very nervous for two hours. The pulse remained quick and at 120 in a minute, and it was at least four hours before it fell to normal. Nothing else was done, more than that the patient was kept very quiet on his back. The cramplike pains he experienced I attributed to an irritation somewhere along the spinal tract, in all probability due to the cocaine. Acting on this theory, I did not use strychnine for the extreme prostration, which I probably should have done otherwise. The evil effects of cocaine he felt for a couple of days. He made an uneventful recovery.

On this same patient I used two cubic centimetres of a four-per-cent. solution a number of times afterward before passing sounds, always with a happy effect.

This case I have undoubtedly profited by, for ever since I have used weaker solutions, strictly observing the initial test injection and rules as above stated. Some days I use cocaine in this way a number of times, and have never since observed any alarming symptoms.

MAL DE SAN ANTONIO

(SPOTLESS LEPROSY).

By ALBERT S. ASHMEAD, M. D.

Dr. Evaristo García, one of the most distinguished of the Colombian leprologists, is of the opinion that the process of resorption of the phalanges in the nervous leprosy of tropical South America is comparable perfectly to the process of destruction of the bones in the tabetic. He showed to M. Charcot (1876) the anatomo-pathological specimens of this disease. These specimens were presented to the Anatomical Society of Paris, and are now in the Dupuytren Museum. In the report made by Dr. García to the Anatomical Society we read: "In M. Charcot's lessons in the Salpêtrière there was presented a skeleton with lesions of reabsorption of bones, consecutive to progressive locomotor ataxia. A similar lesion is found in the bones of hands and feet in a disease very common in Colombia, and vulgarly called *mal de San Antonio*. This disease, slow in progress, is simply a form of the Greek lepra, or elephantiasis. It begins with an anæsthesia of the extremities; shortening and bending of the fingers, so that the hand takes the form of a claw of a bird of prey; there is an atrophy of the muscles by fatty transformation, and it ends locally by a complete resorption of the bones, until hands and feet are represented by pieces of flesh resembling stumps."

Dr. Miguel Ruedo Acosta has seen in Colombia clinical observations in which are found trophical lesions characteristic of nervous leprosy and no spots. "This disease," he says, "whose diagnosis has largely occupied Dr. Estañeda, Dr. Osorio, and other Colombian physicians, has been called *mal de San Antonio*. Sometimes spots are found, but as simple pigmented lines, more or less large, and in small number. In these subjects there is a typical face, called by Poncet the 'mark of the Antonines.' It is a face much like that of subjects suffering from scleroderma. They have a chronic conjunctivitis, very pronounced; the inferior eyelid is in *ectropion* and a little short; they can not shut their eyes completely; the skin of the forehead is smooth, and the expression of the countenance is that of immobility of the features; there are facial paralyses, more pronounced on one side than on the other, and that put the mouth awry. The patients are able to execute certain motions, like whistling, because the superficial muscles of the face alone are paralyzed, the action of the deep muscles being preserved; seldom do the eyelashes fall, but the brows are preserved as well as the hair and the beard, when there is one; but we know that Indians have no beard."

It may perhaps be allowed us to presume that this San Antonio disease has a direct relation with the autochthonous development of leprosy in northern South America, and is probably a link in the chain of development of leprosy from a prebacillary stage, to which may be related the epidemic locomotor ataxia of the Indians of the British North American possessions, and the great prevalence of syringomyelia among the twenty-five thousand so-called lepers of South American Colombia, to the perfect disease characterized by Hansen's bacillus.

270 West Forty-third Street.

WHAT IS ASEPSIS?

By GUSTAVUS BLECH, A. B., M. D.,

DETROIT, MICH.

A great many authors, and a great many more surgeons, seem to differ in their opinions as to the definition of the term asepsis. We hear so many speak of their preference for "aseptic precautions" and "aseptic surgery" to "antiseptic" precautions and "antiseptic" surgery.

Pozzi, in his *Traité de gynécologie*, calls the opponents of antiseptic surgery (Lawson Tait, Bantock) aseptic surgeons, and adds that in intraperitoneal operations "asepsis" is far superior to "antisepsis."

Dr. Pinckney French, of St. Louis, a surgeon of great ability and well acquainted with surgical literature, in an address delivered before the Missouri State Medical Association on May 22d, said: "The well-known and established methods employed for thousands of years for the preservation of animal substances, and the practical adaptation of these methods to the healing of surgical wounds, created Listerism or antisepsis, while the discovery (through bacteriological investigation) that the atmospheric microbes were innocuous led to the belief that infection must be by contact. It was the recognition of this fact that gave birth to asepsis, a systematic method by which wounds are saved further contact with irritative or toxic substances, such as the bichloride of mercury and carbolic acid."

This is the plainest explanation I ever read. From this we learn that antisepsis means the employment of chemicals, while under asepsis is meant all other means—washing, scrubbing, boiling, sterilization, etc.

It must be added here that a good many surgeons have chosen the golden midway—they use chemicals when they expect to deal with wounds and affections of a septic character—otherwise they omit toxic and irritating solutions and operate "aseptically."

So much for one party. The other, in which I count myself, gives a different definition of asepsis.

Dr. Joseph M. Mathews, of Louisville, who justly can be styled the American proctologist, in his treatise on *Diseases of the Rectum and Sigmoid Flexure*, has expressed his dissatisfaction to see both terms so closely allied, which, he says, is apt to lead to confusion. He says he can understand how an antiseptic surgeon is an aseptic one, but limits his definition to this phrase without commenting any further on this question of terminology. From what he said, however, we can clearly see that he does not agree with the definition of the first party.

I find a very good definition in the *American Text-book of Gynæcology*, which I will give below. I must add here that Dr. Hal C. Wyman, of Detroit, a surgeon and author of more than local reputation, fully agrees with this definition.

Asepsis means freedom from septic germs, and is the ideal condition for the hands of operator and assistants and the surgeon's armamentarium.

Antisepsis is the application of any efficient means for getting rid of germs. It may be mechanical, as by scrubbing or washing; chemical, as by the use of carbolic acid or bichloride of mercury; or thermic, by boiling water or steam.

According to this definition, it appears that what the first party terms "aseptic surgery" is nothing else but the employment of mechanical and thermic "antisepsis."

Even the most stubborn followers of Listerism admit that in certain operations chemicals like carbolic acid, mercury, and others of a toxic character ought not to be used, and consequently differ practically in no way from the so-called "aseptic" surgeons.

The most scrupulous "aseptic" surgeon will not refuse, and I have seen a good many frequently employ, solutions of table salt (NaCl), bicarbonate of sodium, and H_2O_2. Are these not chemicals?

Thus, according to the first party, the simple omission in modern surgery of toxic chemicals (especially carbolic acid and mercury) forms a new procedure, which has to be baptized with a term so closely allied to the Listerian schedule. Is this—are they right? Etymologically they are wrong.

The purpose of this article is to call the attention of the profession at large to this variety of opinions. The author heartily wishes that the readers of this journal, to which belong the best surgeons of the world, might express their respective opinion in these columns, and in this way a clear understanding, a standard interpretation of these two terms might be established.

203 East Columbia Street.

A CASE OF ACUTE TUBERCULOSIS

TREATED WITH DR. PAQUIN'S ANTITUBERCLE SERUM.

RECOVERY.

By J. R. LEMEN, M. D.,
ST. LOUIS,
PROFESSOR OF PHYSICAL DIAGNOSIS AND THERAPEUTICS IN
THE MARION SIMS COLLEGE OF MEDICINE.

To the kindness of Dr. Lloyd Simpson, the attending physician, with whom I saw the case reported below a number of times in consultation, I am indebted for these full notes:

R. C. G., aged sixty years, was attacked with *la grippe* March 17, 1895. Two days later, March 19th, I visited the patient in consultation with Dr. Simpson. We found pneumonia of left lung, lower lobe; the respirations twenty-six in a minute; temperature, 104·5° F.; urine, dark color, rather small quantity; specific gravity, 1·025; and upon examination by microscope, blood and pus corpuscles were found.

March 20th.—Dr. Simpson, Dr. Tuholske, and myself saw the patient. The pneumonic process had extended, the left lung being quite extensively involved; respirations, 30 in a minute; temperature, 104·5°.

The pneumonia continued until the ninth day, the temperature ranging 103·5° in morning, 104·5° evening; the respiration during the pneumonia ranging between 30 and 48 in a minute. The temperature and respiration returned to normal in nine or ten days, the lung cleared up, and the patient improved for some days, when the temperature commenced to be irregular, falling below normal in the morning, 97°, and rising from 101·5° to 102·5° in the evening. The cough returned so that the paroxysm became very severe, a tough, fibrinous sputum being expectorated. This later changed to frothy mucus. The area of dullness over the left lung again increased so that the dullness extended almost to the apex; night sweats were very severe, and the patient's general condition was grave. Upon further consultation Dr. H. Tuholske, who was again called, together with Dr. Simpson and myself saw the patient on April 19th, when tubercular infection was suggested by Dr. Tuholske as the possible explanation of the symptoms present at that time. A specimen of sputum was preserved and examined by Dr. Ravold, the board of health microscopist, who reported a large number of tubercle bacilli present, and the case was diagnosticated as one of acute tuberculosis.

Upon report of this condition to the family they desired additional medical aid, and asked that Dr. P. G. Robinson meet us in consultation; and on April 22d, Dr. Robinson, Dr. Simpson, and myself saw the patient and substantially the same condition reported above was found—acute tuberculosis—Dr. Robinson remarking that "the outlook for the patient's recovery was very gloomy, but that the treatment to be tried was the Paquin antitubercular serum, as suggested by Dr. Lemen," so that the serum was commenced on this date, April 22d, and thirty drops given him, the temperature at this time being 102·5°. On April 23d another injection was given, the temperature falling to 100°. This treatment has been continued ever since. The temperature became normal on the fourth day of treatment, the cough improved, the patient slept much better, and has continued to improve. After taking serum for two weeks, however, there was a slight, painful swelling of the left ankle, which was supposed to be due to the serum. This continued for two weeks and then disappeared.

May 10th.—The temperature of the patient rose daily to 100·5° for three days, and then became normal; this rise was ascribed to serum. The appetite has been good since improvement began, and the patient has gained flesh, weighing at this time a hundred and eighty pounds, a gain of about forty pounds. On July 1st a specimen of sputum was given to Dr. Ravold, of the city board of health, who reported no bacilli. Again, on July 7th and July 12th, specimens were examined by the same party, and no bacilli were found.

Thus, taking the three examinations without finding bacilli, and the fact that the improvement of the patient has been so remarkable, it seems to me that the chances are that the bacilli have entirely disappeared, and, considering the condition of the lungs, the fact that they have cleared, and that the patient is now getting plenty of air and is breathing well, I certainly think that the marked improvement must be due to the serum treatment, as I have never before seen a case of acute tuberculosis improve much under any treatment, and then only temporarily, with the same termination, death, as the inevitable outcome of the struggle.

I do not want to seem over-sanguine in regard to this treatment, but the results obtained in this case, and the benefit to three other patients that I have under my care, lead me to believe that much may be expected from serum therapy in the future.

Veratrol.—At a recent meeting of the *Société de biologie*, a report of which is published in the *Gazette médicale de Paris* for August 3d, M. Surmont and M. Vermersch, of Lille, stated that, according to their experience, veratrol, or dimethyl ether of pyrocatechin, was endowed with antiseptic properties in respect to certain pathogenic species. The bacillus of cholera, that of typhoid fever, and that of diphtheria were susceptible to its action. The bacillus of tuberculosis in human beings did not seem to thrive well in the presence of veratrol. The *Bacillus pyogenes cyaneus* and the *Staphylococcus pyogenes aureus* were less energetically influenced by this product.

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NEW YORK, SATURDAY, SEPTEMBER 21, 1895.

STATE REQUIREMENTS FOR THE LICENSE TO PRACTISE.

So much good has been accomplished in many of the States during the last few years by the establishment of examining boards and by the work done by the boards themselves, and so much good seems in prospect in other States by the same agency, that it is a pity to have to call attention to anything in the course followed by a State examining board that appears unfair or injudicious. Something of that sort seems to have happened in Colorado, to judge from an editorial that appeared in the *Denver Medical Times* for September, for a copy of which in pamphlet form we are indebted to the editor, Dr. Thomas H. Hawkins. There is an organization known as the Association of American Medical Colleges. About a year ago this association took action to the effect that each of the schools represented should require of its candidates for graduation an entrance examination and a four years' graded course of not less than seven months in each session. The Colorado State Board of Medical Examiners, says the *Times*, recently passed a resolution declaring that thenceforth it would not recognize the diploma of any medical college that did not make this requirement of its students, which means, we take it, that holders of diplomas issued by schools not conforming to the standard of requirements are not entitled to be examined by the Colorado board. It follows, the *Times* points out, that herein the board is requiring an impossibility of the colleges. "The extended course," says our contemporary, "does not go into effect in reality until the session of 1899, although students who begin the study of medicine this year, and who expect to graduate in 1899, would necessarily have to take the four years' course of study."

We imagine the board's action in this matter was taken inadvertently, and it seems to us that it would be unfair to make it binding on persons graduated before the year 1899, for the colleges can not rightfully insist on the new requirements until then. It has been very difficult to obtain the enactment of beneficent laws governing the license to practise, or indeed requiring any license, and this difficulty has been largely due to popular suspicion that they would work injustice and hardship to individuals; hence, if for no better reason, examining boards established by such laws and working under them should feel bound not to exact of candidates for the license any harder conditions than the law lays down. Let a board once get the reputation of exceeding its real prerogatives, and not only is that particular board likely to be overturned, but the progress of medical legislation in the

State concerned, and even in other States, is seriously hindered. The medical profession is overwhelmingly in favor of legislation that will enable the States to see to it that none but those who are well qualified shall be allowed to practise medicine; but in its endeavors to secure such legislation the profession has always encountered serious opposition, and it can not afford to give its approval or its toleration to any act on the part of an examining board that has even the appearance of injustice, far less of one so manifestly unjust as the Colorado board's requirement will be considered if it is really carried out from this time on. We can not believe that the board will be so unwise as not to revise its action in the matter so as to make it reasonable.

MINOR PARAGRAPHS.

EUTHANASIA BY HOMICIDE.

At the Medico-legal Congress lately held in New York it was implied, if not directly stated, that physicians often killed patients deliberately in some merciful way when they were suffering with agonizing and inevitably fatal disease or injury. The speaker found no fault with this alleged practice, but rather commended it, as well as the destruction of new-born monsters, which also was said to be resorted to by physicians. It is true that such practices, especially that of taking the life of monsters, have occasionally found an advocate among members of the medical profession, but they have never been sanctioned, we believe, by any representative body of medical men; indeed, they have been utterly condemned by the great body of the profession, and we feel sure that physicians all over the world will resent any statement to the contrary, no matter if it is made approvingly. We are far from saying that there are no conceivable circumstances under which it is justifiable to kill a person for his own sake, but the instances are exceedingly rare and no more apt to involve physicians than persons of any other occupation. Medical men aim to prolong life; they do not destroy it because it is painful to such a degree that the sufferer thinks he would prefer death.

A MEDICAL POET.

The *Progrès médical* states that there is living in Finland a plain country doctor, Elias Lœnnrot, who is styled the Christopher Columbus of Finnish poetry. He is said to have dressed up the old epics of ancient Finnish bards in a work entitled *Kalevala*, which has been translated into French and is looked upon as deserving to rank with the *Iliad* and *Paradise Lost*.

A LATIN TRACT ON IMPOTENCE.

We have received a copy of a pamphlet entitled *De impedimento matrimonii dirimente impotentia observationes quædam physicæ*, by Dr. Austin O'Malley. We find the contents sound so far as we have been able to examine them. The opusculum bears the imprint *ex typis Universitatis Nostræ Dominæ, Ind.*

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 17, 1895:

DISEASES.	Week ending Sept. 10.		Week ending Sept. 17.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	41	9	45	5
Scarlet fever	20	2	24	1
Cerebro-spinal meningitis	3	3	3	2
Measles	66	11	49	3
Diphtheria	158	27	113	14
Small-pox	0	0	0	0
Tuberculosis	57	85	130	112

A Nodular Disease of Fowls associated with Tapeworm.—The Bureau of Animal Industry of the United States Department of Agriculture has published an account, by Dr. Veranus A. Moore, chief of the division of animal pathology, of which the following is the substance:

In the spring of 1894, a fowl (*Gallus domesticus*) died at the experiment station of this bureau with a disease characterized by nodules or tuberclelike bodies in the intestinal wall. Upon closer inspection the lesions were found to be in the subserous and muscular coats, and not, to any appreciable extent at least, in the glands. In the intestinal contents there were a large number of small tapeworms, many of which were firmly attached to the mucosa. Later in the season about twenty fowls from the same flock were used for experimental purposes, and upon post-mortem examination were found to be more or less affected with this disease. In addition to these, one of four fowls which were examined from a flock of poultry on a farm adjoining the experiment station was found to be infested with tapeworms and the intestinal wall studded with nodules. A fowl received from Newbern, N. C., and one from Tacketts Mills, Va., were similarly affected.

Although but one fatal case came under Dr. Moore's observation, the extent of the lesions in several of the fowls examined indicated that sooner or later many of them would undoubtedly have succumbed to this disease. The close resemblance of the nodules to tubercles, says Dr. Moore, renders necessary a somewhat detailed description of the lesions and of the means by which this disease may be readily distinguished from tuberculosis without the aid of laboratory facilities.

The fowl which died apparently from this disease was much emaciated, and the lesions were restricted to the intestinal wall. In the fowls used for other purposes there were no observable symptoms by which the nodular affection could be detected prior to post-mortem examination. Diphtheria was the immediate cause of death of the fowls from North Carolina and Virginia. All the fowls examined, affected with this disease, were from one to three years old.

The nodules were invariably more numerous in the lowest third of the small intestine. They occasionally appeared, however, in small numbers in both the duodenum and the colon. The larger and to all appearances older nodules were found in the ileum near the cæca.

In the badly affected portion the nodules gave the appearance of closely set protuberances, varying in size from barely perceptible areas of elevation to bodies four millimetres (a sixth of an inch) in diameter. In some instances they appeared to overlap one another. When separated by a band of normal tissue, they were round or somewhat lenticular in form. In the latter case the long diameter was usually transverse to the long axis of the intestine. The larger nodules were of a pale or dark-yellowish color, while the smaller ones varied in shade from the more highly colored areas to the neutral gray of the normal serosa. To the touch they gave the sensation that would be expected if the subserous and muscular coats were closely studded with small, oval, solid bodies. The mucosa presented similar elevations. Attached to the mucosa over the nodules were a number of tapeworms. There were also in the more advanced cases a variable number of small (a half to one millimetre) areas over the larger nodules in which the mucosa had sloughed, leaving small ulcerated depressions.

The larger nodules contained a greenish-yellow, necrotic substance which appeared, in the advanced stages, as a sequestrum with a roughened surface. On section it had a glistening, homogeneous appearance. Surrounding the necrotic substance was a thin layer of infiltrated tissue. The smaller nodules contained a more purulent-like substance and the smallest appeared to the naked eye as areas of infiltration. Sections of the affected intestine showed upon microscopic examination that the heads of the tapeworms had penetrated the mucous membrane and were situated in different layers of the intestinal wall. They were frequently observed between the villi. As would be expected, the heads were not readily detected in the necrotic masses contained in the larger nodules, but were almost invariably seen in the smaller ones. In a few sections the tapeworm could be traced through the mucosa to the nodule in the muscular tissue in which its head appeared. In the earlier stage of the nodular development there is a cell infiltration about the head of the worm. This process continues until the infiltrated tissue reaches a considerable size.

The worms attached to the mucosa were usually small. A larger form was commonly found in the intestinal contents. Although microscopically they appeared to be different, Dr. Stiles found that they were presumably of the same species.

It appears from the literature, says Dr. Moore, that this disease has not heretofore been demonstrated in America. In 1881, Piana described a disease of fowls in Italy due to the presence of *Tænia bothrioplitis.* His article, however, deals more with the anatomy and classification of the infesting cestode than with the character of the lesions it produced. As he illustrates the nodules and heads of tapeworms in the intestinal wall there can be no doubt of the similarity of the lesions to those in the disease here described. Although fowls and birds are not infrequently infested with tapeworms, the lesions produced by these parasites are, with the exception indicated above, said to be more or less catarrhal in nature.

On account of the unsettled classification of the cestodes of fowls Dr. Moore has been unable to determine the species to which the tapeworm found associated with this disease belongs or to identify it with the one described by Piana. The material was referred to Dr. C. W. Stiles, zoologist of the bureau, who made the following preliminary report:

"The form agrees with Piana's *Tænia bothrioplitis* of 1881; it is more than probable that this form is synonymous with *Davainea tetragona* (Molin, 1858) R. Bl., 1891; a study of the original types of *Davainea echinobothrida* (Megnin, 1881) R. Bl., 1891, and *Tænia pluripunctata* Crety, 1890, will undoubtedly show that these species are very closely allied to *if not identical* with this form."

The importance of this disease, says Dr. Moore, is much greater than it at first appears, as the close resemblance of the nodules to those of tuberculosis renders it of much significance from a differential standpoint. As the intestines are stated to be frequently the seat of the specific lesions of tuberculosis in fowls, it is of the greatest importance that a thorough examination be made before a positive diagnosis is pronounced. There are already several statements concerning the presence of tuberculosis in fowls in which the data given are not sufficient to distinguish the disease from the one here described. A somewhat analogous disease of sheep caused by a nematode (*Œsophagostoma columbianum* Curtice) has led to the deliberate destruction of many animals, the owners believing that tuberculosis was being eliminated from their flocks. As the inquiry into the cause of poultry diseases becomes more general, it is probable that this affection will be occasionally encountered, and unless its nature is recognized it may in some instances, like the sheep disease, lead to an unwarranted destruction of property.

In addition to its importance in distinguishing tuberculosis, it is in itself a malady worthy of careful attention. The fact that it has already appeared in two flocks in the District of Columbia and also in the States of North Carolina and Virginia shows that the infesting cestode is quite widely distributed in this country. It is highly probable that the total loss it occasions, both from deaths and from the shrinkage of poultry products, due to the chronic course of the disease it produces, is very large. The life history of the tapeworm will be fully described by Dr. Stiles in a forthcoming report of the bureau.

Tuberculosis is the only known disease for which this affection is liable to be mistaken, and it is of much importance that the two diseases should not be confounded. The diagnosis has not in Dr. Moore's experience been difficult, as in every case the attached tapeworms were readily detected upon a close examination of the intestinal contents or of the mucous membrane of the infected portion of the intestine. However, the worms are quite small and might easily be overlooked in a hurried or cursory examination. In case of doubt, if the affected intestine is opened, and the mucous surface washed carefully in a gentle stream of water, the small worms will be observed hanging to the mucous membrane. This discovery, in the absence of lesions in the liver or other organs, would warrant the diagnosis of the tapeworm disease. Although much is written concerning tuberculosis in fowls, especially in Europe, the investigations of poultry diseases by the bureau have thus far shown that it is not common among fowls in this country.

The Index Medicus.—Dr. George Thomas Jackson, of New York, informs us that he has obtained the following additional subscriptions: From Dr. Abbe and Dr. Fisk (one subscription), from Dr. W. Gilman Thompson, from Dr. D. B. Delavan.

Change of Address.—Dr. A. Reich, to No. 213 West Twenty-third Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 1 to September 14, 1895:*

GORGAS, WILLIAM C., Captain and Assistant Surgeon, is granted leave of absence for two months, to take effect on or about September 15, 1895.

CORSON, JOSEPH K., Major and Surgeon, is granted leave of absence for two months.

PORTER, ALEXANDER S., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Keogh, Montana, to take effect on the expiration of his present sick leave, and ordered to Fort Huachuca, Arizona, for duty.

WOOD, LEONARD, Captain and Assistant Surgeon, is relieved from duty at Fort McPherson, Georgia, and ordered to report in person to the attending surgeon in Washington for duty as his assistant.

WYETH, MARLBOROUGH C., Captain and Assistant Surgeon, is relieved from duty at the Army and Navy General Hospital, Hot Springs, Arkansas, and ordered to Fort Huachuca, Arizona, for duty.

LAGARDE, LOUIS A., Captain and Assistant Surgeon, is granted leave of absence for one month from the date of his relief from duty at Fort Logan, Colorado.

FLAGG, CHARLES E. B., First Lieutenant and Assistant Surgeon. So much of special order 202, A. G. O., August 29, 1895, as relieves him from duty at Angel Island, Cal., and assigns him to duty at Fort Hancock, Texas, is revoked.

CARTER, EDWARD C., Captain and Assistant Surgeon, will report for duty at Fort Harrison, Missouri, upon the abandonment of Fort Buford, North Dakota.

KIEFFER, CHARLES F., First Lieutenant and Assistant Surgeon, when his services are no longer needed at Fort Buford, will be relieved from duty at that post and will report for duty at Fort Omaha, Nebraska.

WINTER, FRANCIS A., First Lieutenant and Assistant Surgeon. So much of the order as directs him, on being relieved from duty at Fort Hancock, Texas, by Lieutenant Flagg, to report for duty at Fort Grant, Arizona, is amended to direct him to so report upon the abandonment of Fort Hancock.

RICHARD, CHARLES, Captain and Assistant Surgeon. So much of special order 112, A. G. O., May 13, 1895, as directs him to take station at St. Louis, Mo., for duty as attending surgeon and examiner of recruits in that city, is revoked, and upon the expiration of his present leave of absence he is ordered to Fort Brady, Michigan, for duty, relieving DAVIS, WILLIAM B., Captain and Assistant Surgeon. Captain Davis, on being thus relieved, will proceed to and take station in New York city for duty as attending surgeon and examiner of recruits, relieving CORBUSIER, WILLIAM H., Captain and Assistant Surgeon. Captain Corbusier, on being thus relieved, is ordered to Fort Monroe, Virginia, for duty at that post.

GRAY, WILLIAM W., Captain and Assistant Surgeon, upon the expiration of his present leave of absence, will be relieved from duty at Fort Schuyler, New York, and ordered to Philadelphia, Pa., for duty as attending surgeon and examiner of recruits in that city, relieving ROBINSON, SAMUEL Q., Captain and Assistant Surgeon. Captain Robinson, on being thus relieved, is ordered to Fort Reno, Oklahoma, for duty, relieving GARDNER, WILLIAM H., Major and Surgeon. Major Gardner, on being thus relieved, is ordered to Fort Thomas, Kentucky, for duty, relieving WORTHINGTON, JAMES C., Major and Surgeon. Major Worthington, on being thus relieved, is ordered to Vancouver Barracks, Washington, for duty, relieving STEPHENSON, WILLIAM, Captain and Assistant Surgeon. Captain Stephenson, on being thus relieved, is ordered to the Presidio of San Francisco, Cal., for duty at that post.

The following-named officers will report in person on Monday, September 23, 1895, to ALDEN, CHARLES H., Colonel and Assistant Surgeon-General, president of the examining board appointed to meet at Washington for examination as to their fitness for promotion: TESSON, LOUIS S., Captain and Assistant Surgeon; CORBUSIER, WILLIAM H., Captain and Assistant Surgeon; APPEL, DANIEL M., Captain and Assistant Surgeon; and ROBINSON, SAMUEL Q., Captain and Assistant Surgeon.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending September 14, 1895:*

NEILSON, I. L., Surgeon. Detached from the U. S. Receiving-ship Wabash and ordered to the U. S. Steamer Maine.

MEANS, V. C. B., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to the U. S. Steamer Maine.

RICHARDS, T. W., Assistant Surgeon. Detached from the U. S. Receiving-ship Minnesota and ordered to the U. S. Steamer Maine.

LEWIS, D. O., Surgeon. Detached from the U. S. Steamer Mohican and ordered to the U. S. Steamer Marion.

PAGE, J. E., Passed Assistant Surgeon. Detached from the U. S. Steamer Philadelphia and ordered to the Mare Island Hospital.

SMITH, R. K., Assistant Surgeon. Detached from the U. S. Receiving-ship Vermont and ordered to the U. S. Steamer Philadelphia.

GIHON, A. L., Medical Director. Detached from the Naval Hospital, Washington, D. C., and placed on retired list, September 28th.

BRIGHT, GEORGE A., Medical Inspector. Detached from the Navy Yard, New York, and ordered to the Naval Hospital, Washington, D. C.

PRICE, A. F., Medical Inspector. Detached from the Torpedo Station and ordered to the New York Navy Yard.

STEPHENSON, B. F., Surgeon. Detached from the Marine Rendezvous, Boston, and ordered to the U. S. Receiving-ship Wabash.

URIE, J. F., Passed Assistant Surgeon. Ordered to the Marine Rendezvous, Boston, Mass.

STEELE, J. M., Surgeon. Detached from the Marine Rendezvous, New York, and ordered to the Torpedo Station, Newport.

HENEBERGER, L. G., Surgeon. Ordered to the Marine Rendezvous, New York, in addition to his present duties.

MOORE, J. H., Assistant Surgeon. Detached from the U. S. Steamer Atlanta and ordered to the U. S. Training-ship Constellation.

LEACH, PHILIP, Passed Assistant Surgeon. Ordered to the Naval Hospital, New York.

Society Meetings for the Coming Week:

MONDAY, *September 23d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *September 24th:* American Association of Obstetricians and Gynæcologists (first day—Chicago); New York Dermatological Society; Medical Society of the County of Lewis (quarterly), N. Y.; Buffalo Obstetrical Society; Richmond Academy of Medicine and Surgery.

WEDNESDAY, *September 25th:* American Association of Obstetricians and Gynæcologists (second day); New York Academy of Medicine (Section in Laryngology and Rhinology); American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, *September 26th:* American Association of Obstetricians and Gynæcologists (third day); New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; New London, Conn., Medical Society (extra, New London); Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia (conversational).

Friday, *September 27th:* Yorkville Medical Association, New York (private); New York Society of German Physicians; New York Clinical Society; Philadelphia Clinical Society; Philadelphia Laryngological Society; Cleveland, O., Medical Society.

Births, Marriages, and Deaths.

Married.

Asbill—Dubose.—In Florence, S. C., on Tuesday, September 3d, Dr. Fletcher G. Asbill and Miss Miranda Dubose, daughter of the late Dr. J. B. Dubose, of Ridge Springs, S. C.

Died.

Ash.—In Asbury Park, N. J., on Monday, September 2d, Dr. James Ash, of Philadelphia, aged seventy-seven years.

Ballou.—In Lansingburgh, N. Y., on September 9th, Dr. Newton Herrick Ballou, in the eightieth year of his age.

Egan.—In New York, on Saturday, September 14th, Marie Leonella, daughter of Dr. and Mrs. Joseph M. F. Egan, in the seventh year of her age.

Isham.—In Little Falls, N. Y., on Wednesday, September 18th, Dr. Nelson Isham, aged ninety years.

Johnson.—In Milwaukee, on September 9th, Dr. Albert W. Johnson, aged forty-two years.

McIntyre.—In Marion, S. C., on July 28th, Mrs. Minnie McIntyre, wife of Dr. Archibald McIntyre, aged twenty-nine years.

Proceedings of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Annual Meeting, held in Detroit, on Tuesday, Wednesday, Thursday, and Friday, September 3, 4, 5, and 6, 1895.

The President, Dr. William M. Wishard, of Indianapolis, in the Chair.

The Presidential Address.—Dr. H. O. Walker, of Detroit, presented the president, who said the importance and advancement of Detroit were represented by the standing and intelligence of the local physicians. He referred to the beginning of the four years' course in medical colleges, and said the fear that the new rule would operate to the disadvantage of the smaller schools was unfounded. He urged the advisability of publishing the records, papers, and discussions in some manner to make them accessible to all members. He recommended a permanent executive committee, and regretted that the large number of papers necessitated the holding of two meetings at the same time. He commended the preparations for the convention, and pledged his earnest efforts to the promotion of the profit and pleasure of the convention.

The Gold Combinations as Alteratives.—Dr. Thomas Hunt Stucky, of Louisville, said that at a meeting of the Medico-chirurgical Society of Louisville, held on April 5, 1894, he had had the pleasure of exhibiting a series of patients who had been taking the preparations of gold and arsenic known to the profession as arsenauro and mercauro. He had been under the impression at that time that the good effect alleged had been produced in three ways:

1. By stimulation of the secreting glands of the stomach.
2. By the probable alterative effect upon these secretions.
3. Probably by a local antiseptic influence.

The class of patients in which he had used the preparations had been persons afflicted mostly with consumption, Bright's disease in its various stages, or chronic hepatic troubles, and convalescents. He made it a rule in all these cases to withdraw all medicines except the combinations of gold and arsenic. He had selected from a series of cases four or five which he detailed.

Case I.—A man, sixty years of age, with tuberculosis, was given eight drops of the mercuric bromide of gold and arsenic hypodermically every four hours, and this treatment was continued for two months. No deleterious results were noticed. On the contrary, he was decidedly better; his physical condition, color, appetite, and bodily strength were improved.

Dr. Stucky reported a few cases out of a large number to demonstrate in his judgment conclusively that in the combinations of gold and arsenic we had an agent acting as neither of the minerals did when administered separately, or, in other words, we had an entirely new agent in so far as therapeutical action was concerned.

The author then dwelt at considerable length upon the chemical differences between the chloride of gold and sodium and the bromide of gold and arsenic (arsenauro) with reference to their therapeutical action and subsequent elimination. He believed that the action of the combination of bromide of gold and arsenic was entirely different from that of any other therapeutic agent known. As compared with mercauro, iodine, or the combinations of iodides, the action of gold in the combinations named was greater and intensified; these combinations entered into the circulation as gold and arsenic, and spent their force and exerted their influence in an alterative way upon the glandular system; a marked alterative effect was exerted upon all scleroses (non-malignant); it was not only a blood-maker, but a blood-builder; it increased not only the quantity but the quality of the corpuscles; under its use hæmoglobin was decidedly increased; it was eliminated by the kidneys; and it produced no irritation either when given by the mouth or hypodermically.

Cases corroborating the beneficial and curative effects of the preparations mentioned by the essayist were reported by Dr. A. P. Buchman, Dr. I. N. Love, and Dr. W. F. Barclay.

Legitimate Pharmacy.—This paper was read by Dr. William F. Barclay, of Pittsburgh. He defined legitimate pharmacy as that which met the necessities and demands of the regular medical profession and the people. The medical profession was entirely separate and distinct from that of pharmacy. Medicines were divided into four classes—patented, proprietary, non-proprietary, and secret. There were a large number of cures, mixtures, and tonics bearing the names of their originators and deserving of consideration as proprietary preparations. Pharmacists and physicians were interdependent and should work together. Legitimate pharmacy had called into service educated and able men, but the incompetent and dishonest had got in, too, and that could not be too severely condemned. Pharmacists made errors, but physicians were careless, too, in writing prescriptions. Physicians should not favor any particular pharmacist, and should not receive pay from one. On the other hand, it was unworthy and unprofessional for pharmacists to prescribe drugs or medicines. Legitimate pharmacy should protect the people from the nostrum-makers. Physicians had a right to require the highest skill and competency upon the part of the pharmacist, both for their own interests and for the good of their patients.

Cod-liver Oil.—Dr. F. E. Stewart, of Detroit, read a paper on this subject. He considered the powerful stimulant action of cod-liver oil on nutrition, and demonstrated with specimens the difference in the color of oil digested from fresh livers and that prepared from putrid livers, the former being pale, golden, or light brown, according to the number of hours digested, and the latter dark brown. The darker oils contained more extractive matter. Dr. Stewart said the text-books contained many errors regarding the preparation of cod-liver oil.

Dr. I. N. Love, of St. Louis, in the discussion, conceded the merits of the paper, but expressed himself as rather skeptical as to the value of cod-liver oil. He declared that there was danger of our getting too professional, and said that that which brought relief to the patient was to be commended. He favored proprietary remedies which had come to the profession through pharmaceutical channels.

Uterine Fibroids: When to Operate.—Dr. D. Tod Gilliam, of Columbus, Ohio, read a paper with this title. The medical and electrical treatment of uterine fibroids was to-day, he said, in a very unsettled state. While it could not be denied that amelioration or even recovery had followed such treatment, there had not been a degree of uniformity in results calculated to inspire confidence. To the author's mind, there was no better field for a competent observer than the study of the natural history of uterine fibroids. It would enable us to determine the true value of so-called curative agencies. It would insure a more certain prognosis. It would give the proper cue to surgical interference. If, out of a hundred cases, ninety suffering women could be restored to lives of usefulness and happiness, would it not be better to give them a chance? No surgeon was justified in doing hysterectomy or any of the more serious operations for uterine fibroids when the patient had not experienced sufficient trouble to make it a menace to her life.

Tubercular Peritonitis.—This paper was read by Dr. L. H. Dunning, of Indianapolis. In the domain of surgery, he said, there was no more attractive study than that of tubercular peritonitis. The mode of invasion, the forms of the disease, the diagnosis, and the treatment were considered in the paper, and finally a brief history of five cases was given.

Tubercular peritonitis, with effusion, was now universally considered a surgical disease. Even in the acute suppurative cases abdominal section yielded a sufficient number of successes to render its employment imperative. Senn excluded all forms of the disease from surgical treatment except the exudative form. Manclaire gave as the chief contraindications to surgical treatment generalization of the lesion and the existence of profound systemic infection. Linder had analyzed the results in two hundred and five operations, with a mortality of 7·5 per cent. The deaths resulting in most of these cases had been from collapse. In cases of involvement of the Falloppian tubes and ovaries they should be extirpated. His experience in two cases had led him to the belief that we should, if possible, avoid using silk ligatures in tying the pedicle when it was necessary to remove the uterine appendages.

Two of the five cases reported by the author had terminated fatally.

Dr. Gilliam believed that where there was tuberculosis of the ovaries and tubes it was better to remove the uterus too.

Dr. J. Frank, of Chicago, asked whether any of the members who had operated for tuberculosis of the peritonæum had noticed a recurrence, or how long the patient had remained free from further attack.

Dr. Humiston, of Cleveland, O., reported two cases in which he had operated successfully.

Dr. R. Stansbury Sutton, of Pittsburgh, had seen a good many cases of tubercular peritonitis, and in several he had operated successfully. Until within a year he had been in the habit of washing out the cavity with hot water, but now he paid no attention to it, but simply opened the abdomen and cleaned out everything. He was convinced that, while hot water did no harm, it did no good, in that it had no influence upon the disease. He believed in removing, as far as possible, all diseased organs.

Dr. Henry O. Marcy, of Boston, had operated in 1887 for the first time in a case of tubercular peritonitis, and the patient had made an easy recovery. He had operated several times since then for this disease, with excellent results.

Dr. A. H. Cordier, of Kansas City, called attention to the fact that Wells, as early as 1862, had operated for tubercular peritonitis, simply incising the abdomen and draining, thus curing his cases. He thought that drainage was the principal thing that brought about a cure in this disease—but how, was not definitely settled. He said the theory had been advanced by Dr. Morris, of New York, that it was due to the admission of saprophytes into the peritoneal cavity.

Dr. Bayard Holmes, of Chicago, related an interesting case of adhesive peritonitis cured by operation.

Dr. Dunning said that Linder's observations were the most complete of any, and he had found very little tendency to recurrence of the disease where it had been primary and of the adhesive form; but where the disease had been secondary and of the adhesive form, there was a strong tendency to recurrence. His own experience had not been sufficiently extensive to furnish reliable data in this regard.

Hysterectomy for Puerperal Sepsis: When shall it be Performed?—The author of this contribution was Dr. Bayard Holmes, of Chicago. The paper was divided into five parts. 1. A report of four cases of puerperal sepsis treated by four different methods. 2. The pathology of puerperal sepsis in various stages. 3. Curettement in the hands of its advocates. 4. Puerperal sepsis as a cause of death in Chicago, New York, and Brooklyn, and in the Charity Hospital at Berlin, with an abstract of 79 deaths from puerperal sepsis in 6,635 cases.

The first of the author's cases was that of a multipara, twenty-six years of age, of Irish extraction, having a history of tuberculosis of the lungs, confined under unfavorable circumstances, with retained placenta, post-partum hæmorrhage, manual delivery without an anæsthetic, arrest of hæmorrhage, gradual sepsis, failure of curettement, and death seven weeks after confinement.

The second case was that of a woman, thirty years of age, who had a normal confinement. Sepsis appeared upon the fourth day, of a mild character, gradually increasing until six weeks after delivery. The temperature was high, the pulse was rapid, and there were symptoms of peritonitis with obstruction of the bowels. By laparotomy the broad right ligament, tube, and ovary were removed, and drainage was established through the vagina. Death occurred after eight days, without peritonitis, from phlebitis and pulmonary embolism.

The third case, in a multipara with a gonorrhœal history, was one of abortion followed by pelvic inflammation, peritonitis, and obstruction three weeks after delivery. Both tubes were removed and abdominal drainage was established.

Death took place after ten days, without peritonitis, from phlebitis and pulmonary embolism.

The fourth case was that of a multipara, thirty-two years of age, delivered by a midwife, with a bad history of puerperal infection, rapid onset of a mild infection, and no curettement. There was obstruction of the bowels, with vomiting, six weeks after delivery, with evidences of peritoneal effusion. Laparotomy was done for the removal of the uterus and its annexa, abdominal drainage was established, and recovery took place. This uterus and these appendages were carefully examined microscopically. There was evidence of necrotic endometritis, suppurative endometritis, suppurative metritis, suppurative lymphangeitis in both tubes, with abscess of the ovarian ligament upon the right side, and adjacent peritonitis. The blood-vessels throughout the broad ligaments were found indicating a progressive infective thrombosis. The uterine tissue was filled with pus cells occupying the circumvascular and lymph spaces with occasional obliteration of large blood-vessels. The author held that the progress of puerperal infection was in this case through infective thrombosis and suppurative lymphangeitis, and that the removal of both tubes and drainage would have been ineffectual. He then proceeded to recount the pathological findings in cases of non-infected puerperal women who had died from accidental causes during the first, third, and sixth week after labor, and also who had died without infection at somewhat similar times after labor, stating the comparison of the normal and the abnormal uterine and circumuterine tissues.

The question of treating puerperal infection by *évidement*, or curetting, was discussed by presenting the work of its own advocates, showing that out of 7,600 cases of labor in the hands of one of the advocates of curettement 101 had been treated by repeated curettement and irrigation. Of these, 96 had recovered and 5 had died.

An abstract of the history of these five cases was presented, showing that there was every reason to believe that after curettement had failed hysterectomy would have proved efficient in saving the patients.

A series of 6,635 cases of confinement occurring in the Charity Hospital in Berlin under the care of Hensoldt, Schwarze, Huenermann, and Hochselter during four successive years was then analyzed. Seventy-nine deaths from all causes had occurred. Of these deaths, 33 had resulted from puerperal sepsis, and in order to fully understand the possibility of these cases, a short epitome of the history of each was presented, showing that only 3 out of 633 cases had been of such a character as to give rise to the suspicion that the patients might not have been saved by a hysterectomy.

The author gave the following conclusions: 1. Puerperal sepsis has its origin in the endometrium, and usually travels by the lymph channels or by the thrombotic blood-vessels and the lymph channels together. 2. It still causes almost half of the deaths which occur in the puerperal state. 3. Curetting is ineffectual in many cases of puerperal sepsis. 4. The removal of an infected broad ligament and the drainage of a pelvic abscess or peritonitis is often ineffectual. 5. Hysterectomy should be performed, therefore, in such cases of puerperal infection as do not yield to uterine curetting and irrigation. 6. Hysterectomy should be done whenever peritonitis is present in the course of puerperal fever. 7. Hysterectomy should be performed in cases of puerperal mania where there is a history of endometritis without uræmia. 8. Hysterectomy may not be helpful in the course of diphtheritic elytritis and endometritis. 9. Hysterectomy may not be helpful in cases of rapid early infection. 10. It may not be useful in cases of septic phlebitis reaching outside of the pelvis.

A Method of Preventing Thirst following Cœliotomy.—Dr. W. H. Humiston read a paper thus entitled. He said: "No one who has had any experience in the after-care of abdominal cases will deny the important place that thirst occupies. It is the one prominent, annoying, and distressing symptom, and I know it can be overcome. This is my method of procedure: The patient should have the usual preparation for cœliotomy—*i. e.*, by diet, daily baths, cathartics, etc. For three days prior to the operation order the patient to drink a pint of hot water an hour before each meal and on going to bed, thus drinking two quarts of water each twenty-four hours, the last pint to be taken three hours before the time set for operating. Do not omit to give the water on the day previous to the operation, while the patient is restricted to a limited amount of liquid nourishment and the bowels are being unloaded. We thus restore to the system the large loss of fluid occasioned by the free catharsis, and we have the great satisfaction of seeing our patient pass through the trying ordeal of the first thirty-six hours after the operation in comparative comfort, with no thirst, with a moist tongue, and with an active renal function represented by an excretion of from twenty-eight to fifty fluidounces of urine during the first twenty-four hours, catheterism being seldom necessary. This is in keeping with the full character of the pulse noted.

"These details I have recently carried out in twelve cases. In eleven, chloroform was administered; in one, ether. The time required to complete the operation varied from ten to fifty-five minutes. Whether the case was one of sclerotic ovaries or a purulent case with adhesions of all the pelvic structures, the result has been uniform and highly satisfactory, thirst being allayed and excretion stimulated.

"I believe this method will prove to be efficient in the hands of abdominal surgeons generally, and I publish it early with all confidence that the twelve cases that I have had will soon be fortified by the reports of many hundreds, and that by it we may avoid a condition that is and has been distressing alike to the patient, to the surgeon, and to the nurse."

Cœliotomy in General Suppurative Peritonitis.—This paper was read by Dr. Miles F. Porter, of Fort Wayne, Ind. The author first quoted Prandin, who had said, regarding general puerperal peritonitis: "The women die, no matter what the form of treatment employed." Dr. Baldy had said: "To my knowledge, there has never been reported an undoubted case of general purulent peritonitis from any cause whatever in which an abdominal section or any other line of treatment has succeeded in saving the patient's life." That the mortality of general septic peritonitis was large, said the author, was agreed, but that it was always fatal was certainly not true. Dr. Porter then reported a case, and closed by saying that his object in writing the paper had been to assist in arousing a sentiment against the too prevalent idea that in general septic peritonitis death is inevitable, and to encourage prompt operative interference in these cases.

Peritoneal Irrigation and Drainage was the title of a paper read by Dr. A. H. Cordier, of Kansas City, in which he said that the latest works on abdominal and pelvic surgery contained, like the older text-books, very short and misleading articles on the indications for peritoneal irrigation and drainage, and still less explicit were the directions as to how to use these agents intelligently and correctly. This diversity of opinion among authors left the inexperienced in a position of perplexity and doubt as to the special course he was to pursue in his early work. The same principles held good in draining the peritoneal cavity that were applicable to other parts of the body. No surgeon, with all the antiseptic precautions possible to be used in opening a diffuse abscess of the thigh or other part of the body, would think of such a thing as at once closing the wound hermetically, leaving many broken-down shreds of diseased tissue dangling in the abscess cavity. He might have irrigated the cavity thoroughly with a 1-to-1,000 bichloride-of-mercury solution, yet he would not feel it safe to close the wound until after he had made counter-openings and introduced a drainage-tube, this being as near ideal surgery as was possible in these cases. Freshly boiled distilled or filtered water, cooled to from 102° to 110° F., should be used in irrigating.

The author drew the following deductions: 1. Drainage is a life-saving process when properly used. 2. To use it is not an admission on the part of the surgeon that his work during the operation has been imperfect. 3. The use of the tube alone does not produce or leave any condition that favors the development of hernia. 4. The omentum and other structures do not become entangled in the openings in the tube. 5. A small-sized flint glass tube, with small openings and an open end, should always be selected for pelvic drainage. 6. The tube does not produce fæcal fistulæ. 7. The tube should be used when we are in doubt as to the absence or presence of drainage indications. 8. To depend upon microscopic findings as to whether in a given case the cavity should or should not be drained is seemingly scientific, but is neither necessary nor practicable. 9. Gauze drains should rarely be used, and should always be supplemented by a glass drain. 10. There is no danger of infecting the patient through a tube if the attendant is properly instructed.

Hysterectomy following Cœliotomy for Pyosalpinx.—Dr. J. Henry Carstens, of Detroit, in a paper on this subject, summarized his remarks as follows: 1. It seemed to him in the light of his present experience in cases of bilateral pyosalpinx, that a more perfect and complete operation could be performed by abdominal section, with less danger of injury to the bladder and intestines, and with a smaller mortality and better ultimate results; that in certain cases a better immediate result was obtained by vaginal hysterectomy and drainage, but these cases frequently required a second operation to remove the ovarian tissue and parts of the tube which at first in many cases could not be removed, before a perfect ultimate cure was established; that where the sympathetic and other nerves were affected, the cause was not in the uterus, the ovaries, or the tubes alone, but partly in each. We are unable to state which organ was at the bottom of the trouble. Sometimes it might be one, sometimes another, sometimes two or all three; hence, in such cases he would say that in many cases with marked nervous symptoms the best results were obtained only after the complete removal of every particle of the generative organs—uterus, tubes, and ovaries—whether at one, two, or three operations, *per vaginam* or by abdominal section.

Dr. R. S. Sutton, of Pittsburgh, favored abdominal section. He maintained that a uterus deprived of its appendages was of no use, and that it was, if left, liable to tuberculosis, gonorrhœa, syphilis, nasty discharges, adhesions, etc. When it was decided to remove the appendages, the uterus also should be taken out.

Dr. D. T. Gilliam, of Columbus, O., argued against the removal of the uterus with the appendages, the objection being that shortening of the vagina resulted.

Dr. B. M. Ricketts, of Cincinnati, believed total extirpation would be abandoned. The dangers were cystocele, hernia, increased danger of prolonging the operation, and shortening of the vagina.

Dr. Henry O. Marcy, of Boston, favored retaining the cervix when it was healthy, and pointed out the reasons why it should not be removed. It helped materially in acting as a support to the vault of the vagina.

Dr. Bayard Holmes, of Chicago, discussing Dr. Cordier's paper, said that drainage was a sort of vicarious redemption for poor surgery. Whenever it was impossible to make a wound clean, we must drain, and sometimes we drained when the wound was clean, but we were unable to arrest the hæmorrhage. He could conceive of no other indication for drainage, whether in the abdomen, the brain, or any other part of the body, than failure to meet one great indication of wound treatment—to keep the wound clean.

(*To be continued.*)

Miscellany.

Acid Fuchsine as an Agent for the Distinction of Bacteria.—In the *Abstract of Sanitary Reports* for August 23d Dr. E. Andrade Penny, assistant in the Hygienic Laboratory of the Marine-Hospital Service, has an article which is substantially as follows:

The changes of reaction brought about by different kinds of bacteria in the culture media where they are grown have not been carefully studied. There exists considerable variance of opinion among bacteriologists as to the reactions of the intestinal micro-organisms, more especially the *Bacillus typhosus* and the *Bacillus coli communis*. Brieger holds that the *Bacillus typhosus* produces an acid change. Klemensciewicz states that both these produce an acid reaction, which is more marked in the *Bacillus coli*. Thoinot and Masselin, on the other hand, say that, according to their experience, the *Bacillus coli communis* produces first an alkaline reaction, which gradually changes into an acid. Peré, after a careful investigation, states that in peptone bouillon made from meat less than forty hours old both the *Bacillus coli communis* and the *Bacillus typhosus* produce an acid which gradually changes to an alkali, the stage of acidity being shorter with the *Bacillus typhosus* than with the *Bacillus coli*. These reactions varied according to the time the meat was kept before use. Peré concludes that the different and opposite results of the investigators are due to the influence of the variable composition of the media, and not so much to the micro-organisms in question.

In view of these contradictory statements, the author says, and believing that very important and useful data for distinguishing bacteria and for the complete knowledge of their biological properties could be obtained from the careful study of the reactions they produce in different culture media, he has undertaken a series of experiments. The results obtained deal with those forms of bacilli which are usually found in the intestinal canal—viz., the *Bacillus coli communis*, the *Bacillus typhosus*, the *Bacillus proteus vulgaris*, the *Bacillus acidi lactici*, and the *Bacillus lactis aerogenes*. The experiments made with the spirilla will be the subject of another communication.

Aqueous solutions of acid fuchsine (fuchsine, S. Grübler) have been found to be excellent indicators for acids and alkalies. Solutions of this aniline dye lose their bright red color in the presence of alkalies, and recover it or become more intensely red when acted upon by acids, either mineral or vegetable. It has been found that 0·01 of a centigramme of caustic potash combines with 0·005 of a milligramme of acid fuchsine, and forms a colorless salt, the sensibility of which is that 0·00003 of a gramme detects 0·001 of a cubic centimetre of pure hydrochloric acid. The intensity of the color assumed by the indicator is directly in relation to the amount of the reagent. Moreover, so far as has been observed, the addition of acid fuchsine to the culture media has not the slightest influence on the growth of the germs. To ten cubic centimetres of ordinary bouillon more than 0·5 of a cubic centimetre of a saturated aqueous solution of acid fuchsine was added without inhibiting the growth. This indicator has the advantage of being readily soluble in water; the solutions are entirely clear and transparent, and do not produce precipitates when the medium is rendered sufficiently alkaline to completely decolorize it. This is quite in contrast with other aniline colors, which have more or less these properties. It is known that Legrain used solutions of ordinary basic fuchsine for the same purpose. This has not in the author's hands yielded good results, because it is far less sensitive than acid fuchsine; the solutions are cloudy and throw down a brownish-red precipitate in the presence of alkalies, which interferes with the tests.

These tests include many kinds of media, to which has been added the acid fuchsine, viz., ordinary peptone bouillon, beef tea, Dunham's peptone solution, Dunham's peptone solution with glycerin, somatose solutions, and somatose solutions with glycerin; also these media to which agar-agar and gelatin had been added. Of each medium two specimens were prepared, one pink and the other decolorized, the difference being that the pink was exactly neutral in its reaction, while the so-called decolorized was slightly alkaline. The amount of acid fuchsine in both was about the same.

After many trials, says Dr. Penny, it was found that the most sensitive of the pink media was one that was exactly neutral and contained acid fuchsine in the proportion of 1 to 25,000 or 1 to 33,000, those decolorized having an alkalinity equal to 0·006 milligramme of caustic potash in every 100 cubic centimetres.

Neutral peptone bouillon is prepared in the usual way, and titrated for sodium chloride, so that it contains 0·5 centigramme to the litre. This is important, as an increase of the salt proportionately diminishes the growth of the bacteria and hence interferes with the reaction. After the bouillon is prepared the acid fuchsine in aqueous solution is added, so that the medium contains the fuchsine in the proportion of 1 to 25,000 for the pink or neutral bouillon.

The decolorized or alkaline bouillon is prepared by adding to every hundred cubic centimetres of the neutral medium 0·006 of a milligramme of caustic potash and acid fuchsine in the proportion of 1 to 33,000.

After the addition of the fuchsine the bouillon is boiled or about half an hour, and then filtered, put into tubes, each containing ten cubic centimetres, and then sterilized in the usual way. It is observed that on heating the media the color deepens, but on cooling the original color returns; but it is sometimes paler.

Dunham's solution of peptone, with six-per-cent. glycerin containing acid fuchsine in the proportion of one to 33,000, has been found to be the best adapted for distinguishing the intestinal organisms. The decolorized solution is made in the same manner as for the decolorized bouillon; the advantage of this medium over others is that on account of its absence of color it indicates the slightest trace of acid.

Instead of Dunham's peptone solution somatose has also been employed in the same manner, adding to its solutions the same amount of salt and glycerin; it is not so satisfactory as Dunham's solution, owing to the deep orange tint of the solution, and before the proper color was obtained the amount of acid fuchsine had to be increased, so that it contained it in the proportion of 1 to 2,500. Decolorized solutions are prepared in the same manner as others.

Solid media of agar-agar or gelatin are prepared from Dunham's or somatose solutions; the glycerin, however, should not be added until they are neutralized and filtered, otherwise the media may not be clear and transparent. This is especially so with gelatin. The same amounts of acid fuchsine are added to each, and they are neutralized in the usual manner.

The experiments, says the author, were made with one specimen of the *Bacillus proteus vulgaris*, one of the *Bacillus acidi lactici*, one of the *Bacillus lactis aerogenes*, six different specimens of the *Bacillus typhosus*, and five of the *Bacillus coli communis*. The specimens of the *Bacillus typhosus* and of the *Bacillus coli communis* were obtained from different sources—from New York, from the laboratory of the Johns Hopkins University, from the laboratory of the Army Medical Museum, from the Bureau of Animal Industry, and from the Hygienic Laboratory. Another specimen of the *Bacillus typhosus* was placed at the author's disposal through the kindness of Dr. Reed, of the Army Medical Museum, and designated by him by the name of blue typhoid, on account of the deep blue tint assumed by its cultures in litmus milk after a certain number of days. Each experiment was checked by plate cultures so that in no instance was there any contamination by other bacteria. As a general rule, the cultures used in these experiments were bouillon cultures twenty-four or thirty-six hours old and at a mean temperature of 98·3° F., although experiments were also made with cultures considerably older and grown under different conditions.

The following results were obtained by planting the microorganisms already mentioned in acid fuchsine bouillon:

1. After from six to eight hours the *Bacillus acidi lactici*, the *Bacillus coli communis*, and the *Bacillus lactis aerogenes* develop a considerable quantity of acid, especially the *Bacillus acidi lactici* and the *Bacillus lactis aerogenes*. This acid reaction is indicated by the increased intensity of the pink bouillon or the appearance of the pink color in the decolorized one.

2. After twenty-four hours the acid reaction begins to disappear, the bouillon has a paler tint, and, at the end of forty-eight or fifty hours, they show a marked alkaline reaction, which increases rapidly until the pink color entirely disappears, the cultures presenting then a yellowish hue.

3. The *Bacillus proteus vulgaris* does not present an acid stage from the beginning; it alkalinizes the medium so that at the end of twenty-four hours the pink bouillon has lost almost all its color.

4. The *Bacillus typhosus* shows the acid production of the initial stage later than any of the others; it occurs after ten or twelve hours, and remains acid for a long period, varying from seven to ten days, and even longer; then the acidity gradually disappears; usually by the twelfth day the decolorization of the pink medium is accomplished.

The changes of reaction of the cultures are shown by the color assumed by the medium, and there will be a sharp distinction between the *Bacillus typhosus* and the other bacteria mentioned, so great that it is easy to distinguish it from the others. Especially is this well marked in fresh cultures. If the culture has been kept on laboratory media for a long time this change is not so pronounced as was demonstrated in one of the specimens of the typhoid bacillus, which had been kept under prolonged cultivation. There was a marked diminution in its acid-producing power, making the difference between its culture and those of the *Bacillus coli communis* very slight. It was found, on further study, that this property was influenced by the character of the media, especially in the composition of the beef tea, which is by no means constant. Accordingly other media were brought into use, bearing always in mind that such would always be of constant composition, and in which the differences of reaction changes between the *Bacillus typhosus* and the other intestinal micro-organisms should be the same, notwithstanding the different ages and sources of the cultures used. This medium is the peptone solution prepared according to Dunham's formula with the addition of glycerin and acid fuchsine. The addition of the glycerin is essential to bring about the reaction, as no marked change is observed in simple Dunham's solution. The following results were obtained with this medium:

1. During the first forty-eight hours the *Bacillus acidi lactici* and the *Bacillus lactis aerogenes* produce a strong acid reaction, especially so with the former, but the *Bacillus coli communis*, the *Bacillus proteus vulgaris*, and the *Bacillus typhosus* do not produce any marked change.
2. At the end of forty-eight or fifty hours the *Bacillus coli communis* and the *Bacillus proteus vulgaris* also produced an acid, so that the cultures became quite red.
3. The *Bacillus typhosus* does not show any marked acid production until the fifth or seventh day, when it acquires the same tint as the others.

By observing the color of the cultures, says Dr. Penny, after forty-eight or fifty hours it is very easy to distinguish the pale pink or colorless culture of the *Bacillus typhosus* from the intensely red of the other organisms. As these results have been constant and have not shown any variation in a very long series of experiments made under different circumstances this test is positive, establishing the presence of or distinguishing the *Bacillus typhosus* from the other intestinal micro-organisms, and especially from the *Bacillus coli communis.*

It will be noticed that the change of reaction brought about in the glycerin peptone solution with acid fuchsine is different from what takes place in the bouillon, for while the last stage in the bouillon cultures is one of alkalinity after a period of acidity (except in the case of the *Bacillus proteus vulgaris*, which has no initial acid stage), in Dunham's solution with glycerin and acid fuchsine no marked change is observed at the beginning, and the last stage is one of acidity. In this case the change of reaction is produced in all probability by an oxygenation of the glycerin, while in the case of bouillon the reaction is due to the influence of the germs on the inosite or any other hydrocarbonates.

Beautiful results were also observed by planting the *Bacillus coli communis* and the *Bacillus typhosus* in Dunham's solution with glycerin and fuchsine, to which agar-agar or gelatin had been added. Stab cultures of the *Bacillus coli communis* and the *Bacillus typhosus* made in the agar medium and kept at 98·3° F. showed the following results: Those of the *Bacillus coli communis* were pinker than those of the *Bacillus typhosus*, the pink color being more marked along the stab, although it was diffused throughout the agar. The pink coloration increased, and on the third day the culture presented a brilliant red color. On the other hand, the cultures of the *Bacillus typhosus* showed at the end of forty-eight hours a pink tint at the upper part of the stab, from whence the color was diffused to the upper stratum, gradually fading as it approached the periphery. The deeper strata were unchanged, the line of demarcation between the upper and the lower portions being sharply drawn. This condition was changed little by little, the lower portions gradually assuming a red coloration. Twelve days later the cultures of the *Bacillus typhosus* were red in their whole extent. This shows quite conclusively that the changes are due to an oxygenation of the media by the action of the culture. Shake cultures of the same bacteria were made with the same results in a much shorter time, the cultures of the *Bacillus coli communis* producing the characteristic bubbles on the third day. The red coloration of the cultures of the *Bacillus typhosus* began in this case by a narrow superficial zone that gradually extended to the whole tube.

Shake cultures in Dunham's solution with glycerin and acid fuchsine and gelatin showed the difference between the *Bacillus coli communis* and the *Bacillus typhosus* in twenty-two hours after they had been planted, in spite of the fact that on account of extremely hot weather the cultures were kept at 50° F. As in the cases before mentioned, the *Bacillus coli communis* produced an acid change, making more intense the pink color of the cultures, while the *Bacillus typhosus* did not produce any acid until the third day. It is thus seen that in this gelatin medium the *Bacillus typhosus* produces acid in a shorter time than in the agar or liquid media.

The *Bacillus typhosus* and the *Bacillus coli communis* were also planted in the somatose solution, with glycerin and acid fuchsine. The results were the same as those observed with Dunham's solution with glycerin, but the changes were brought about in less than twenty-four hours. At the end of this time the cultures of the *Bacillus coli communis* exhibited a bright red color.

It will be seen that, by growing the intestinal organisms in the media mentioned above, we are enabled to distinguish organisms that are so often confounded with each other.

Dr. Penny states that he is now experimenting with other intestinal bacteria, more especially the spirilla, and the results so far obtained are promising, and will be published.

The American Public Health Association.—The twenty-third annual meeting will be held in Denver, Col., in the Brown Palace Hotel, on October 1st, 2d, 3d, and 4th, under the presidency of Dr. William Bailey, of Louisville. The following subjects will be discussed: The Pollution of Water Supplies; The Disposal of Garbage and Refuse; Animal Diseases and Animal Food; The Nomenclature of Diseases and Forms of Statistics; Protective Inoculations in Infectious Diseases; National Health Legislation; The Cause and Prevention of Diphtheria; The Causes and Prevention of Infant Mortality; The Restriction and Prevention of Tuberculosis; Car Sanitation; The Prevention of the Spread of Yellow Fever; Steamship and Steamboat Sanitation; The Transportation of the Dead; The Disposal of the Dead; and the Use of Alcoholic Drinks from a Sanitary Standpoint.

The special committees are: *Publication Committee.*—Dr. Irving A. Watson and Dr. Granville P. Conn, of Concord, N. H.; Dr. Samuel W. Abbott, of Wakefield, Mass.

On the Pollution of Water Supplies.—Major Charles Smart, U. S. A., of Washington, D. C., with authority to select associates.

On the Disposal of Garbage and Refuse.—Rudolph Hering, C. E., of New York; Professor Delos Fall, of Albion, Mich.; Dr. Louis Laberge, of Montreal; Dr. Henry F. Hoyt, of St. Paul; Roberto Gayol, C. E., of Mexico.

On Animal Diseases and Animal Food.—D. E. Salmon, D. V. M., of Washington, D. C.; Professor James Law, of Ithaca, N. Y.; Professor José L. Gomez, of Mexico; and Dr. Pinckney Thompson, of Henderson, Ky.

On Nomenclature of Diseases and Forms of Statistics.—Dr. Samuel W. Abbott, of Wakefield, Mass.; Dr. Jesus E. Monjaras, of San Luis Potosi, Mexico; Dr. Elzéar Pelletier, of Montreal; Professor Charles A. Lindsley, of New Haven; and Dr. Charles N. Hewitt, of Red Wing, Minn.

On Protective Inoculations in Infectious Diseases.—Professor Victor C. Vaughan, of Ann Arbor, Mich.; Surgeon-General George M. Sternberg, U. S. Army, of Washington, D. C.; Dr. George H. F. Nuttall, of Baltimore; Dr. M. Carmona y Valle, of Mexico; and Dr. J. E. Laberge, of Montreal.

On National Health Legislation.—Dr. Henry P. Walcott, of Cambridge, Mass.; Dr. J. N. McCormack, of Bowling Green, Ky.; Dr. Irving A. Watson, of Concord, N. H.; Dr. James D. Plunket, of Nashville, Tenn.; Dr. Henry B. Baker, of Lansing, Mich.; Dr. Samuel R. Oliphant, of New Orleans; Dr. Richard M. Swearinggen, of Austin, Texas; Dr. Henry B. Horlbeck, of Charleston; Dr. Benjamin Lee, of Philadelphia; Dr. Samuel H. Durgin, of Boston; Dr. U. O. B. Wingate, of Milwaukee; Dr. Stephen Smith, of New York; and Dr. C. O. Probst, of Columbus, Ohio.

On the Cause and Prevention of Diphtheria.—Dr. George C. Ashmun, of Cleveland; Dr. Peter H. Bryce, of Toronto; Dr. Juan Ramirez de Arellano, of Mexico; Dr. Wyatt Johnston, of Montreal; and Dr. A. W. Suiter, of Herkimer, N. Y.

On the Causes and Prevention of Infant Mortality.—Dr. Charles N. Hewitt, of Red Wing, Minn., with authority to select associates.

On the Restriction and Prevention of Tuberculosis.—Dr. J. N. McCormack, of Bowling Green, Ky.; Dr. H. B. Baker, of Lansing, Mich.; Dr. P. H. Bryce, of Toronto; Dr. Henry Sewall, of Denver; and Dr. U. O. B. Wingate, of Milwaukee.

On Car Sanitation.—Dr. Granville P. Conn, of Concord, N. H.; E. C. Jordon, C. E., of Portland, Me.; Dr. Domingo Orvañanos, of Mexico; Dr. William Oldright, of Toronto; and Dr. E. R. Lewis, of Kansas City.

International Committee on the Prevention of the Spread of Yellow Fever.—Dr. Felix Formento, of New Orleans; Surgeon-General George M. Sternberg, U. S. Army, of Washington, D. C.; Dr. Eduardo Liceaga, of Mexico; Dr. Manual Carmona y Valle, of Mexico; Dr. Jerome Cochran, of Mobile; Dr. Samuel Oliphant, of New Orleans; and Mr. Alfred V. Wood, of Brunswick, Ga.

On Steamship and Steamboat Sanitation.—Dr. Farquhar Ferguson, of New York; Dr. Frederick Montizambert, of Quebec; Dr. Samuel R. Oliphant, of New Orleans; Dr. H. B. Horlbeck, of Charleston; and Dr. Albert L. Gihon, U. S. Navy, of Washington, D. C.

On the Transportation of the Dead.—Dr. Jefferson D. Griffith, of Kansas City; Dr. P. H. Bryce, of Toronto; and Dr. Charles D. Smith, of Portland, Me.

On the Disposal of the Dead.—Dr. C. O. Probst, of Columbus, Ohio; Dr. Farquhar Ferguson, of New York; Mr. George W. Fuller, of Lawrence, Mass.; Dr. Elzéar Pelletier, of Montreal; and Dr. Jesus Chico, of Guanajuato, of Mexico.

On the Use of Alcoholic Drinks from a Sanitary Standpoint.—Dr. Felix Formento, of New Orleans; Dr. C. O. Probst, of Columbus, Ohio; and Dr. E. P. Lachapelle, of Montreal.

Cycling and Heart Disease.—In No. 43 of the *Asclepiad* there is a paper on this subject, by Sir Benjamin Ward Richardson, which was read before the Medical Society of London in January. In this paper the author confines himself to the three following points: 1. The immediate effects of the exercise on the heart and circulation. 2. The after-effects as observed in the consulting room. 3. A summary of the more salient and practical considerations of a purely medical character.

With regard to the immediate effects, he says, the exercise of cycling has an effect upon the body at large, but it is upon the heart and circulation that it tells primarily and distinctively. In this it differs from many other exercises.

Rowing tells on the breathing organs; the work of dumb-bells, and of other exercises where muscles are moved without progression of the body, tells most on the muscles themselves; and long pedestrian feats, with climbing, tell on the nervous system.

In cycling, as in running, it is the heart and circulation that first give demonstrative evidence of important change of action.

In all riders at all ages, in riders who are practised in the art as well as in riders who are neither practised nor extreme in the work, there is, in the beginning of each attempt, a quickened circulation, although there may be no consciousness of the phenomenon. The pulse at the same time is full and bounding, and there is the further fact that throughout the ride there is a continued rapidity, not amounting to the same degree as at first, but, if the pace is even moderate, rarely falling under a hundred pulsations a minute. In men advanced in life the same increase, relatively, is observed as in younger men, a circumstance that tallies with the rise of the senile pulse normally, as if senility were indeed a part of the second childhood. The rise of the pulse is considerably increased in the act of climbing ascents, with a fall on horizontal planes, and a well-marked fall in descents, especially if the feet are taken off the pedals. The strokes may come down to their natural number if the descent is very long, and if there is no disturbing act that interferes with the cardiac motion, an interference, says the author, that is always detrimental to the rider, especially if he is of a nervous temperament. While the pulse is increased in action, the heart is found to be of full bound like the pulse, if it is examined during a few moments of rest. The external impulse is very pronounced, and the sounds of the heart are full and determinate, with, sometimes, an accentuation of the second sound. The dullness of the cardiac region is also extended, indicating that the cavities of the heart are at their fullest distention.

In cycling, so long as the exercise can be continued, an increase of cardiac motion is observable, the act of movement on the machine seeming sufficient to keep the circulation in its vigorous and now more equal tension. This accounts, the author thinks, for the astounding journeys which the fully trained cyclist can undertake when he is in his prime, also for his endurance against sleep; the circulation through the brain being one continued series of waves by which the molecular repose occurring during natural sleep is suspended.

According to his experience, no rider on a cycle escapes the quickened motion of the heart, and Kolb, whose admirable work on the *Physiology of Sport* betrays at once a truly observant and unbiased judgment, comes to the same conclusion. The statement, as a matter of fact, is sufficient of itself to cause a degree of alarm to those who have not studied the question practically; yet, strange as it is, it is only fair to say that the mischief which follows the overaction does not, at the moment, lead to the appearance of any such amount of danger as might, *a priori*, be expected. The writer states that he has never known any rider to be so embarrassed by cardiac overaction as to cause him to stop in order to dismount and seek rest. We might be inclined to say, therefore, he says, that cycling, though it increases the rate of the circulation so rapidly, is not injurious. Such a statement, however, he adds, would be wrong, because there has not been a sufficient length of time to determine from many cases what the ultimate effect of long-continued and hard riding may be. The evidence on this particular subject is unfavorable from a general point of view, for several accomplished riders have, after some years, succumbed prematurely to diseases of the circulation; but there has been no sufficient pathological inquiry to prove in what way the damage was developed.

In regard to the after-effects, the modification in the motion of the heart, which the author believes is universal among riders, leads, he says, to the question of the after-effects on those who have some disease of the heart or of the great blood-vessels. While the effect of cycling upon the heart as a stimulant is striking, he says, it is the remote rather than the immediate effects, central and peripheral, that are injurious. This is the reason why so many thousands of cyclists carry the exercise to an extreme degree, and are so rarely subjected to early fatal consequences. At the same time it is true that long persistent stimulation from riding induces changes which lead to a gradual deterioration, due probably to degeneration of the elastic tissue and incompetency of that tissue to fulfill its functions in the body at large. Nothing, says the writer, has surprised him so much as the immunity of cyclists who are actually suffering from symptoms of cardiac disorder. This, he says, may be thought a strange statement; but, he adds, there are marked conditions, strongly objective conditions, of diseases of the circulation in which, though danger might be expected, benefit has arisen from the exercise.

The summary of the more salient medical and practical considerations, says the writer, is as follows:

1. Cycling, when carried on with moderation, may, in so far as the healthy heart is concerned, be permitted, or even recommended, by practitioners of the healing art.

2. In every case of heart disease it is not necessary to exclude cycling. It may even be useful in certain instances where the action of the heart is feeble, and where signs of fatty degeneration are found; since increased muscular exercise often improves the condition of muscle, and of no muscle more than the heart itself.

3. As the action of cycling tells directly upon the motion of the heart, the effect it produces on that organ is phenomenally and unexpectedly great, in regard to the work it gets out of it.

4. The ultimate effect of severe cycling is to increase the size of the heart, and to render it irritable and oversensitive to motion, the cycling acting upon it like a stimulant.

5. The overdevelopment of the heart under the continual overaction and extreme overaction affects, in turn, the arterial resilience, modifies the natural blood pressure, and favors degenerative structural change in the organs of the body generally.

6. A fact that has only been incidentally noticed in this paper is worthy of notice—namely, that in persons of timid and nervous natures, neurotics, the fear incidental to cycling, especially in crowded thoroughfares, is often creative of disturbance and palpitation of the heart, and ought to be taken into account in preventive advice.

7. In advising patients on the subject of cycling it is often more important to consider the peripheral condition of the circulation than the central. Enfeebled or worn-out arteries, that is to say, are more dangerous than the feeble heart, and, when connected with a heart that is overactive, are seats of danger. This same remark would, of course, apply to cases where there is local arterial injury, as in aneurysm.

8. Venous enlargement seems rather to be benefited than injured by cycling, and conditions marked by sluggish circulation through veins are often greatly relieved by the exercise.

9. There are three sets of acts which are most injurious in cycling: Straining to climb hills and to meet head winds. Excessive fatigue. The process of exciting the heart and wearing it out sooner by alcoholic stimulants, to the omission of light, frequently repeated, and judiciously selected foods.

10. The time has arrived when practitioners of medicine everywhere should make observations for themselves that confirm or confute the foregoing.

Hiccough.—The *Lancet* for August 24th publishes an article on this subject by Dr. John O. Leonhardt, who says that nothing is more common, trivial, and easy to treat than a mild attack of singultus, and yet, when it appears in its violent types, nothing is more distressing to the patient and harassing to the physician than this convulsive affection of the diaphragm. He relates the case of a man who had hiccoughed incessantly for two days and nights. The patient was a large, plethoric person, sixty years old; his pulse was rapid and small, the skin hot and dry. He suffered from great restlessness with delirium, together with coughing and hiccoughing with every inspiration. It was impossible, says Dr. Leonhardt, to determine with any degree of accuracy the condition of the lungs and heart, owing to the agitation of the patient and to the great commotion within the chest. He appeared to be in a very critical condition. Dr. Leonhardt prescribed an active hydragogue and half a grain of sulphate of morphine by the mouth. The cathartic acted in a short time and the patient fell asleep, but the hiccough continued. Antispasmodics and sedatives were then tried, also counter-irritation—in fact, everything that might be expected to quiet the spasm—during the following week, but without the least effect. The author then ordered twenty drops every half hour of a mixture containing equal parts of acetic and sulphuric acids. An unexpected and decided improvement took place, he says, and the patient became convalescent within twenty-four hours. He had hiccoughed constantly, day and night, awake or asleep, whether under the influence of hypnotics or not, for eight days. About ten years afterward Dr. Leonhardt learned that he had died from the effects of a similar attack.

The author cites a number of cases that seem to him, he says, both interesting and instructive, of which the following are examples: 1. A negro, aged forty years, had dyspnœa and hiccough. He would hiccough constantly for six minutes and then enjoy a short period of rest. Bleeding, cupping the epigastrium, and hydrocyanic acid, used internally, were resorted to, but with no effect. After twelve days he recovered while taking laudanum and ammonia. 2. Dupuytren cured two violent and obstinate cases by the use of the actual cautery applied over the xiphoid cartilage. 3. Mindière, in the *Revue medicale*, directs attention to the influence of malaria on the viscera, and its expression in severe hiccough. He reports the case of a man who, recovering from an attack of ague, was seized with a violent hiccough which, in spite of opiates, blisters, and antispasmodics, persisted for nine days, when it disappeared under the use of enemata of quinine. 4. Dr. Danet, in a severe case, following great mental disturbance and associated with headache and vomiting, after trying a great number of antispasmodics in vain, effected a recovery with a pill containing three quarters of a grain of valerianate of zinc and a small quantity of belladonna. 5. Dr. Constable treats of hiccough as a complication of pneumonitis, and recommends the subcutaneous injection of morphine. 6. In another case an infusion of mustard, given by mistake, caused the immediate disappearance of the hiccough. 7. Dr. Ortille relates a case of a woman, in whom hiccough had persisted for seven months. A decoction of jaborandi leaves and stalk was given in two doses fifteen minutes apart, and in two hours the patient was cured. 8. Dr. Smart, in a case of hiccough in a man who suffered from chronic alcoholism, used inhalations of chloroform after ineffectual attempts for four or five weeks to control the spasms with other remedies.

In the foregoing observations, says the author, it will appear that pilocarpine, epigastric compression, morphine, and chloroform are the mainstays of several able practitioners in the treatment of this disorder. It will also be seen that hiccough in old men is of shorter duration, as a rule, than in young women. Among the causes are found any irritation of the phrenic nerves, whether reflex, central, or peripheral. Its occurrence is common in the advanced stages of fatal diseases of all kinds: in uræmia, cholera, dysentery, gangrene, hæmorrhage, low fevers, and adynamic states generally; in apoplexy, hydrocephalus, meningitis, embolism, acute gastritis, cancer of the stomach, pericarditis, aneurysm, pneumonia, intestinal obstructions, strangulated hernia, and the passing of renal and hepatic calculi; in mediastinal pleuritis, fracture of the ribs, malaria, gouty inflammation of serous membranes near the diaphragm, spasmodic stricture of the œsophagus, affections of the larynx or pharynx, and enlargements along the sides of the thyreoid or in the course of the phrenic nerves; in many diseased conditions of the liver, the spleen, the pancreas, the ovaries, the uterus, the prostate, etc.; even from ingestion of irritating substances, solid or fluid, so common in those addicted to rapid eating, gourmandizing, drunkenness, etc.; excessive crying or laughter is sufficient to cause hiccough in children and those of unstable nervous systems.

While these excerpts, he says, will doubtless puzzle the "symptom doctor," the pathologist and real clinician will have no difficulty in distinguishing the real from the apparent. It certainly appears plainly that hiccough is not a disease *per se*, but rather a neurotic equivalent occurring in many different diseases. While obscure but trivial nervous conditions may coexist with a paroxysm of singultus which is usually readily amenable to simple measures often of a psychical character entirely, hiccough may be of so threatening and obstinate a nature that the resources of the ablest may be of no avail. It is in cases of the latter kind that a primary morbosity, if sought for, can, he believes, usually be found, and of which the diaphragmatic convulsions, though all-absorbing, are really but like the white crests of waves that, however conspicuous, are distinctly dependent upon the energy of sun and wind and water. Hiccough, says Dr. Leonhardt, is not a disease; it belongs to a class of imposing symptoms of which neurasthenia, dropsy, jaundice, fever, etc., are examples. The physician who permits himself to be deceived by the boisterous qualities of any disease shadow, which he assails regardless of the character of the real pathological substance that casts it, lacks medical acumen and exposes his patient to much unnecessary suffering and possibly danger.

The Treatment of Fractures near a Joint by Rest, aided by Massage and Passive Movement.—The September number of the *Edinburgh Medical Journal* contains an abstract of a paper by Dr. A. G. Miller, which was read before the Medico-chirurgical Society of Edinburgh. He considers the present methods of treating fractures near a joint unsatisfactory, as the injured limbs are frequently stiff and comparatively useless even after a long period of treatment. There is no doubt, he says, that different causes may operate in different cases, and probably more than one in each; but the main cause he believes to be the long period of rest maintained for the treatment of the fracture. In the case of fracture near a joint there is generally a double injury. The joint is damaged, more or less, by the same force that fractures the bone. We have then, he says, not a simple fracture, but a fracture plus a sprain. If the limb is put in a rigid apparatus, and kept there for some weeks, the fracture is being treated properly enough, but the sprain is ignored. This practice has arisen, he believes, from the fear, hitherto uppermost in the surgeon's mind, of non-union of the fracture. In his experience, however, ununited fractures are very rare, while stiff limbs are very common.

Rest alone does not cause ankylosis. A healthy limb may be put up in a rigid apparatus for weeks, and yet quickly recover its mobility when the apparatus is taken off. On the other hand, let a damaged joint, say a sprain, be put up in plaster for some weeks, and it will take as many weeks of massage to make it useful.

Let us see, then, says the author, how this occurs, and let us take a case of Pott's fracture as an example. Besides the fracture of the fibula there is tearing of ligaments, damage to the synovial membrane and to the tendons and their sheaths. There is effusion of blood and serum into and around the joint. Now if this state of matters be left to itself, it is quite evident that adhesions and contractions may form which will materially interfere with the subsequent usefulness of the foot and ankle.

How is this difficulty to be met? he asks. Are we to treat the sprain, therefore, and ignore the fracture? By no means. No more than we are to treat the fracture and ignore the condition of the joint. We have to treat the two injuries simultaneously. Rest for the fracture, and massage and movement for the joint, effusion, etc.

Dr. Miller takes as an example a case in which there was fracture of both bones of the leg in the lower third, slightly compound, and accompanied by much bruising and effusion of blood into the cellular tissue. The limb was put up in a box splint made by two pieces of wood rolled up in a sheet and well padded. This splint was opened down twice a week, and the leg carefully and gently massaged, and the ankle moved with every precaution to prevent movement of the fractured surfaces. The result in five weeks has been, he thinks, most satisfactory. The proper treatment of a fracture, says the author, often obliges the surgeon to take off the splints several times during the course of treatment. The swelling that results almost immediately after a fracture subsides considerably in a few days, and any apparatus that has been applied becomes loose, and has to be readjusted. The padding used to prevent undue pressure becomes felted and hard in some places, or the limb, from some other cause, may become uncomfortable, and the splints have again to be removed and replaced. In this way, or from other causes, fractures have generally to be taken down and looked at several times during their treatment. If this has to be done once or twice for the benefit of the fracture, why not five or six times, he asks. And if the fracture has to be taken down for the purpose of readjustment, why not apply a little massage and careful movement at the same time?

The advantages of this combination of rest, says Dr. Miller, with massage and passive movement are: 1. Complete rest is provided for the union of the fractured bone, except for a few minutes once or twice a week. 2. Swelling and effusion are got rid of more quickly by the massage. 3. Adhesions are prevented by passive movements. 4. Union of the fractured surfaces is probably facilitated by the massage. 5. Time is saved.

Original Communications.

OPERATIVE SURGERY
IN THE SERVICE OF WILLIAM T. BULL, M. D.,
AT THE NEW YORK HOSPITAL,
From July 1, 1890, to January 1, 1895.

By E. M. FOOTE, M. D.,
LATE HOUSE SURGEON.

(Concluded from page 360.)

MISCELLANEOUS OPERATIONS.

From the remaining operations, the following eighteen cases have been selected for brief description:

Traumatic Deformity of the Nose; Restoration after Eighteen Years by means of a Platinum Bridge.—C. T., a woman, aged twenty-one years, received an injury to the nose when three years old. The resulting deformity is shown in Figs. 19 and 20. The cartilaginous sæptum was wanting.

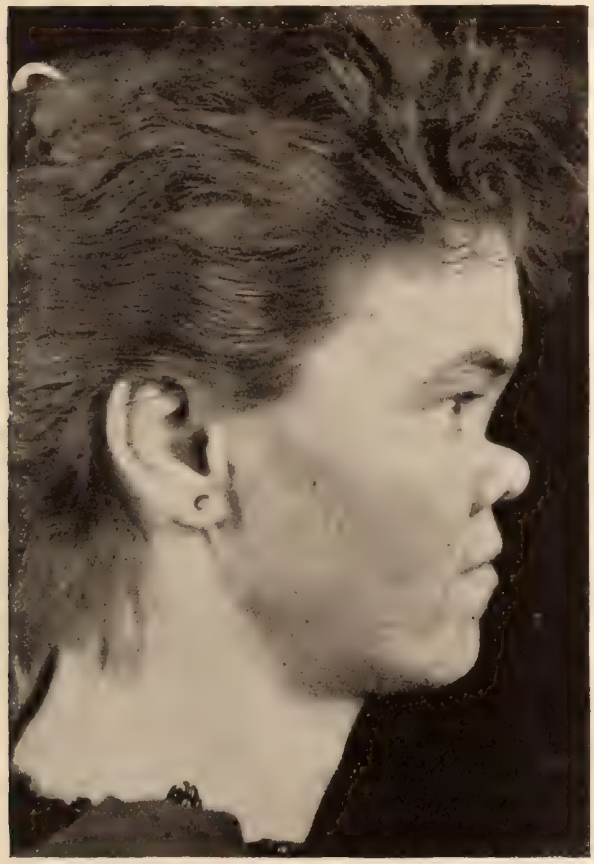

Fig. 19.

November 25, 1893.—The upper lip and nose were separated from the superior maxilla sufficiently to expose the nasal bones. Holes were drilled into the left nasal bone, and into both superior maxillary bones just outside the anterior nares. Into these three holes were pressed the three supports of the platinum bridge and the nose drawn into position over it. A steel pin passed through the nose from side to side held it accurately in position. The operation was followed by considerable swelling of the face and headache. These symptoms had entirely disappeared in a week. The steel pin was removed on the seventh day. The patient left the hospital in seventeen days without any signs of irritation, and presenting the appearance shown in Figs. 21 and 22.

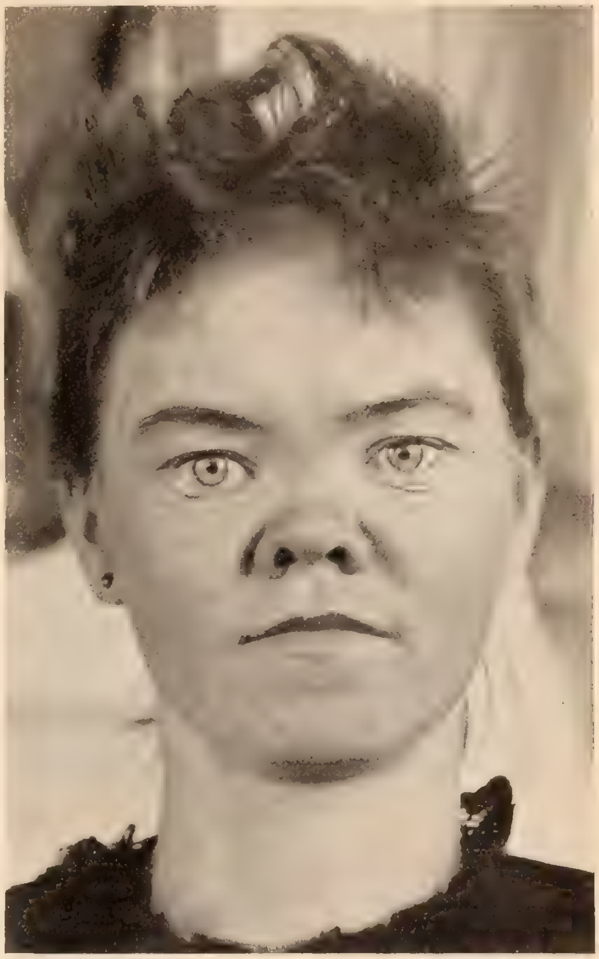

Fig. 20.

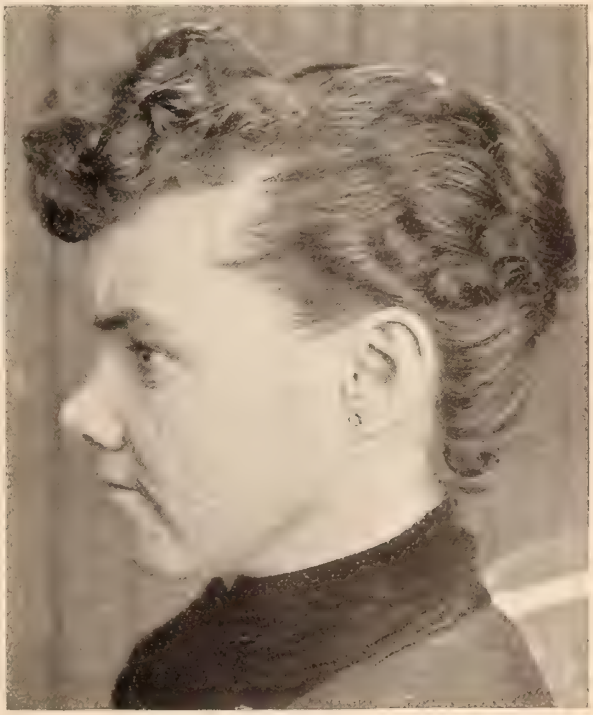

Fig. 21.

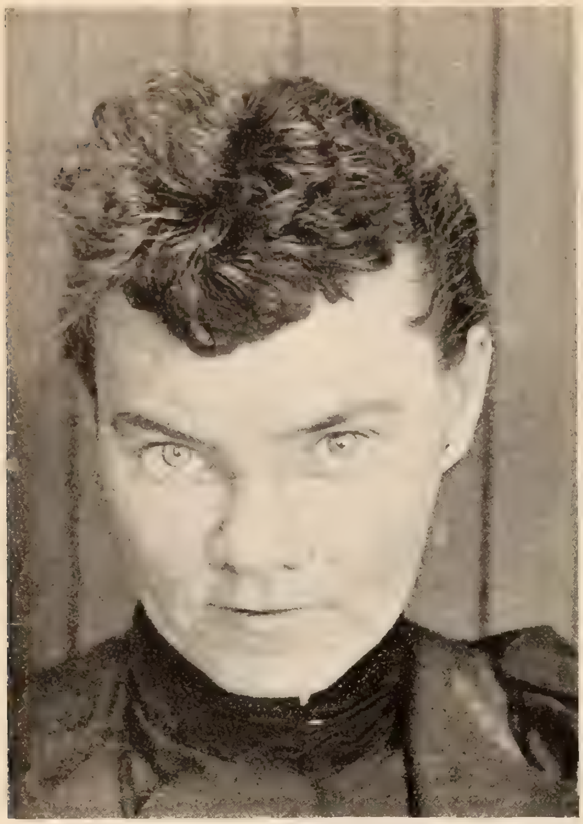

Fig. 22.

Compound Depressed Fracture of the Skull from a Pistol Shot; Location of Bullet by Girdner-Telephone Probe; Extraction; Death.—A. S., a man, aged forty years, received at close range the ball of a 32-calibre revolver in the left temple. The bullet struck the zygomatic arch and was split into many pieces. April 17, 1894, about twelve hours after the accident, the wound was enlarged, the zygomatic arch cut away, and many pieces of the ball extracted. By means of the Girdner-telephone probe other pieces of the ball lying deep in were found and removed. Some of these had fractured and depressed the squamous portion of the temporal bone, and one fragment had penetrated the skull and rested on the superior border of the petrous bone beneath the dura. Before the operation the patient was in a state of shock. Pulse, 62, and temperature 96·2°. He rallied from the anæsthetic fairly well, but he soon passed into a state of coma with gradually rising temperature, from which he did not recover. Death in forty-eight hours after the operation. No autopsy.

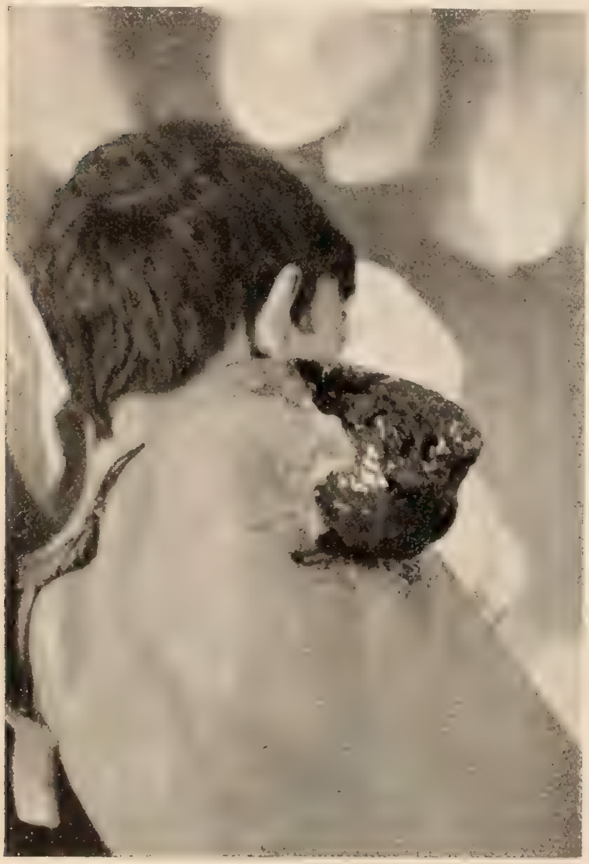

Fig. 23.

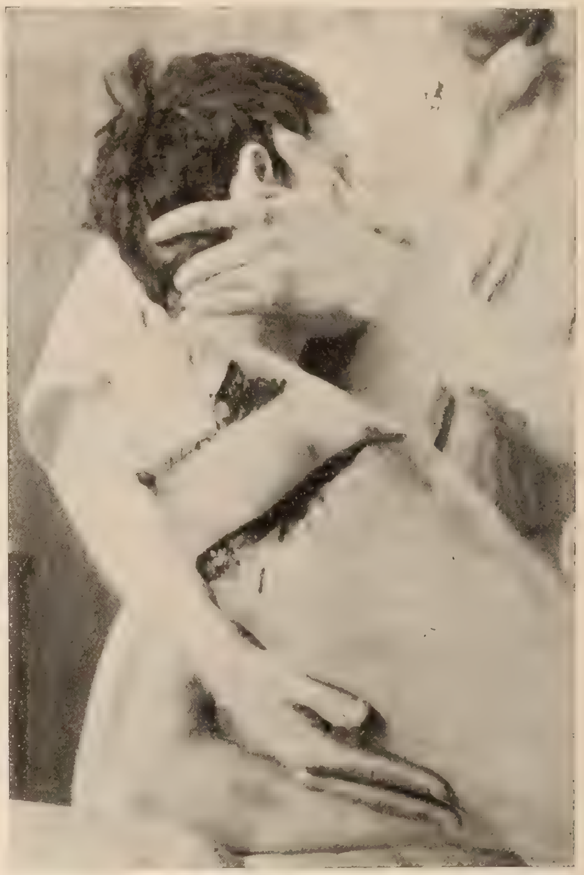

Fig. 24

Traumatic Amputation of the Arm; Slough of Flaps; Plastic Operation.—J. F., a boy, aged fourteen years, lost his right arm in machinery December 30, 1892. He went at once to the hospital, where it was amputated above the middle of the humerus. The flaps sloughed badly and a granulating stump resulted (Fig. 23). Four weeks later, in order to save the stump of his arm, a strip was dissected up from the ribs without loosening its ends, and the arm tucked into this artificial pocket (Fig. 24). This flap adhered nicely, and two weeks later its posterior end was separated and wrapped about the stump (Fig. 25). Ten days later the anterior attachment was freed, and also wrapped about the stump. There was more or less suppuration, but no sloughing. The denuded area in the axilla was closed partly by a plastic operation, partly by skin grafting. When Fig. 26 was taken there was still a small ulcer remaining which has long since healed.

Three Cases of Fracture of the Humerus by Direct Violence; Implication of Musculo-spiral Nerve; Dissection; Restoration of Function in One Case only.—P. T., a man, aged sixty-three years, suffered a fracture of the humerus by a blow upon its outer aspect. Eleven days later drop wrist observed. Five weeks after the injury this symptom persisted, although union was then fairly firm. No anæsthesia.

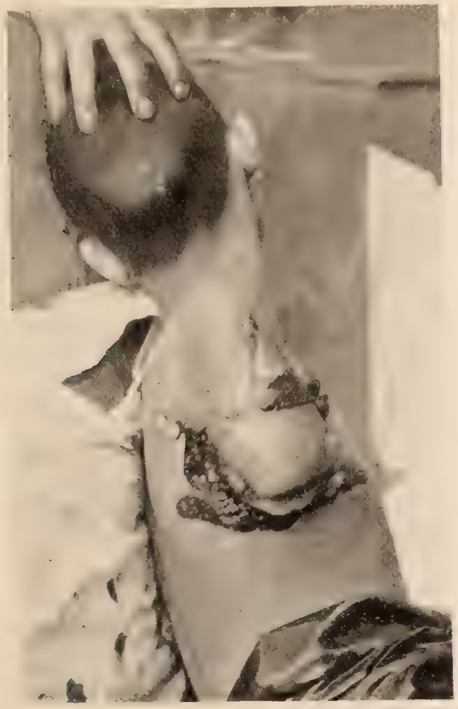

Fig. 25.

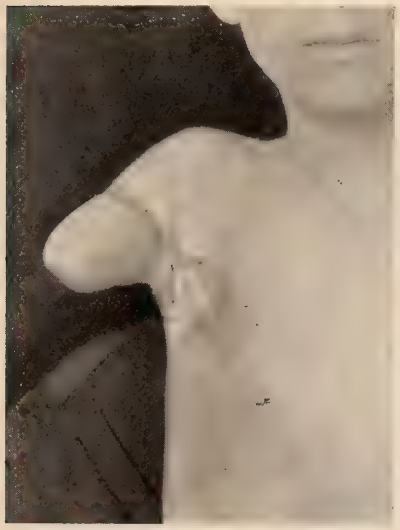

Fig. 26.

August 25, 1891.—The musculo-spiral nerve was dissected free from the callus, and the new bone underlying it was chiseled away. The wound suppurated slightly and healed by granulation. Electricity applied to the muscles for a month with partial recovery. Nine months later, use of all muscles was completely restored.

A similar complication occurred in L. E., a boy, aged eight years, whose arm was broken by the kick of a horse. Two months later the nerve was freed from the callus in which it was imbedded and the wound healed primarily, but there was no restoration of function.

The third case was that of B. F., a man, aged thirty years He presented himself seven weeks after a fracture at the elbow. The arm had been put up in plaster of Paris in extension. There was only a slight degree of motion at the elbow and the extensor and supinator longus muscles were completely paralyzed—not responding to electricity. The radio-ulnar joints were normal.

December 20, 1893.—A longitudinal incision was made to the outer side of the elbow. The radial nerve was intact. The injury had severed the interosseous nerve just at its origin, and a mass of cicatricial tissue surrounded this point. The nerves were dissected free and the interosseous and musculo-spiral sutured. A mass of new bone was chiseled from the anterior surface of the humerus and the arm put up at a right angle in plaster. When the wound had healed, galvanism was applied every other day for a month with no sign of returning function in the extensor muscles.

Fracture of the Femur; Non-union; Resection Eleven Weeks Later; Recovery.—Resection of the femur for non-union after a simple fracture was performed upon S. G., a man, aged sixty-five years. The thigh was fractured obliquely by indirect violence, and although the ends were in apposition and considerable callus was thrown out, eleven weeks' treatment by apparatus failed to give solid union.

April 15, 1892.—Through a three-and-a-half-inch incision the ends of the bone were lifted out and sawed off square. There was marked osteitis in the upper fragment. A rubber drain was left in the wound and a plaster spica applied. The wound of the soft parts healed readily. In eight weeks there was considerable bony union, and in ten weeks the patient was about wearing still a splint. The union later became perfectly solid.

Compound Fracture of the Femur; Non-union; Resection Twice Performed; Recovery.—R. A., a man, aged twenty-one years, fell eleven stories, passing through a glass roof when he had traversed eight stories. He was badly cut by the glass, and sustained a compound direct fracture of the right femur at its middle. The wounds of the soft parts repaired rapidly, but after forty-four days' treatment with splints and extension there was no attempt at union of the bone.

August 13, 1891.—An external incision was made. A layer of muscle had been separating the fragments. This was removed, the ends of the bone freshened and kept in place by an ivory peg. The wound suppurated, and after seven weeks' further treatment there was still no union. Dr. Stimson, who was then in charge of the service, performed a second resection, removing the peg. Complete union resulted with a considerable shortening.

Rupture of Right Ligamentum Patellæ; Fracture of Left Patella; Suture; Recovery.—L. F., a man, aged forty-five years, two years before his entrance, had ruptured the right patellar ligament. There had been no treatment and there was loss of extension of the leg. On the day previous to his entrance the left patella was fractured below its middle by a fall.

It was treated by strapping and a plaster splint with a perfect result, and an operation for the relief of the ruptured ligament of the other leg was undertaken.

October 21, 1893.—A ⊥-shaped incision was made below the right patella, the joint was freely opened, and the patella and its ligament were approximated by three kangaroo-tendon sutures. The capsule of the joint was closed with catgut and the skin with silkworm gut, and a plaster-of-Paris splint applied. Primary union. Splints kept on for ten weeks. At his discharge there was a fair amount of extension, and the leg could be flexed to ninety degrees.

Figs. 27 and 28 are from photographs taken before the operation.

Intra-uterine Fracture of the Tibia and Fibula; Osteotomy at One Year; Recovery.—W. N., a male child. Several days after his birth the mother noticed that the left leg was deformed. Examination showed that it was due to a fracture united at an angle. No attempt at reduction was made. A year later, when he was brought to the hospital, the lower fragments of the tibia and fibula were firmly united to the upper ones at an angle of ninety degrees. The condition is admirably represented in Figs. 29 and 30, from photographs taken just before the operation.

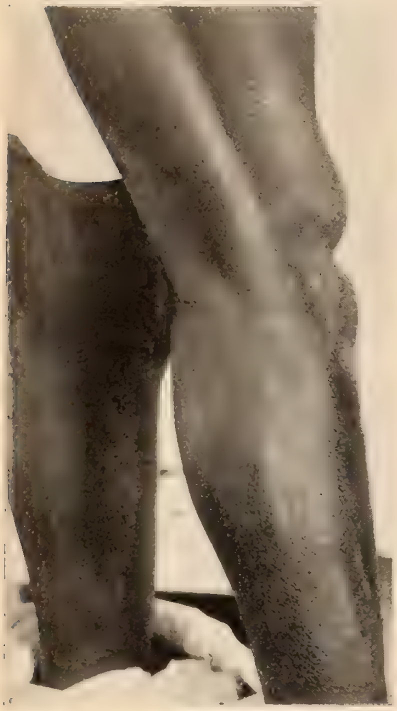

Fig. 27.

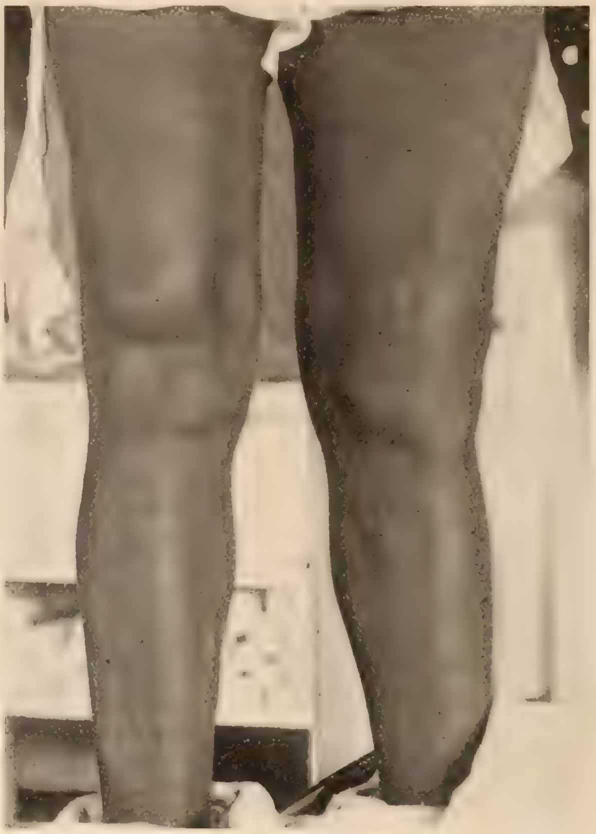

Fig. 28.

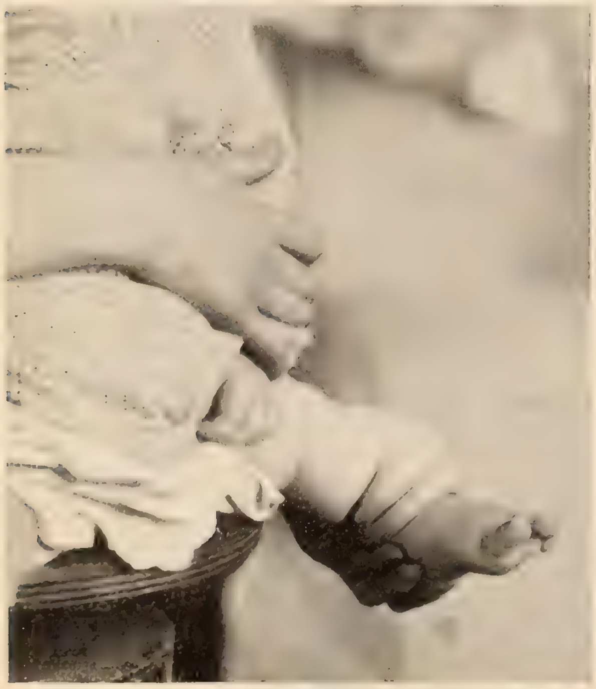

Fig. 29.

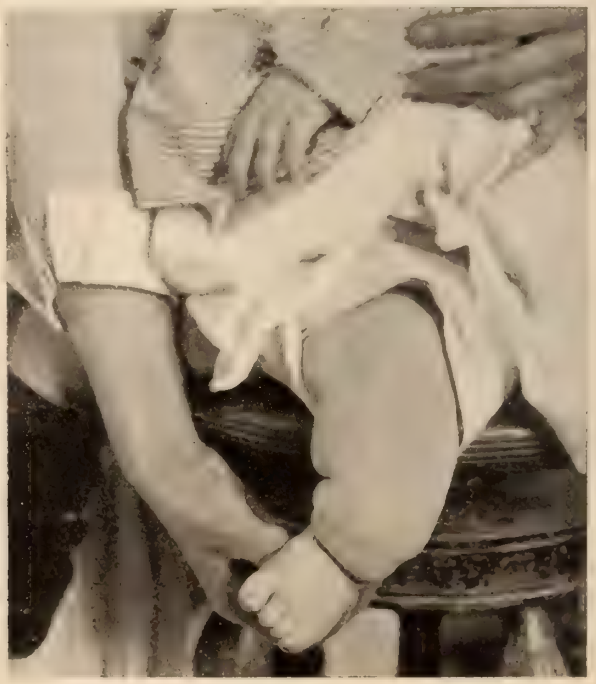

Fig. 30.

October 28, 1893.—A wedge-shaped piece of bone without its periosteum was removed from tibia and fibula at the angle of deformity, the tendo Achillis cut subcutaneously, and the leg put up in plaster of Paris in a correct position. When the splint was removed, two weeks later, union was complete and the leg perfectly straight, with slight shortening. The leg was kept in splints for five weeks.

Congenital and Acquired Hypertrophy of the Toes; Amputation; Recovery.—L. P., a boy, aged fourteen years, was born with abnormally large second and third toes of the right foot. The hypertrophy grew more marked from year to year, until the condition was reached which is shown in Fig. 31.

The hypertrophy affected the metatarsals as well as the phalanges, and was confined to these two toes, which were nearly three times as long as the corresponding toes of the left foot. On May 2, 1891, the toes were amputated at the metatarso-phalangeal joint and healing took place by primary union.

Three Cases of Aneurysm of the Femoral Artery, One Double; Ligature; Recovery.—One case of femoral aneurysm jus above the right knee was that of J. W., a man, aged sixty-five years. It was noticed only six weeks before the operation and it had grown rapidly with increasing pain.

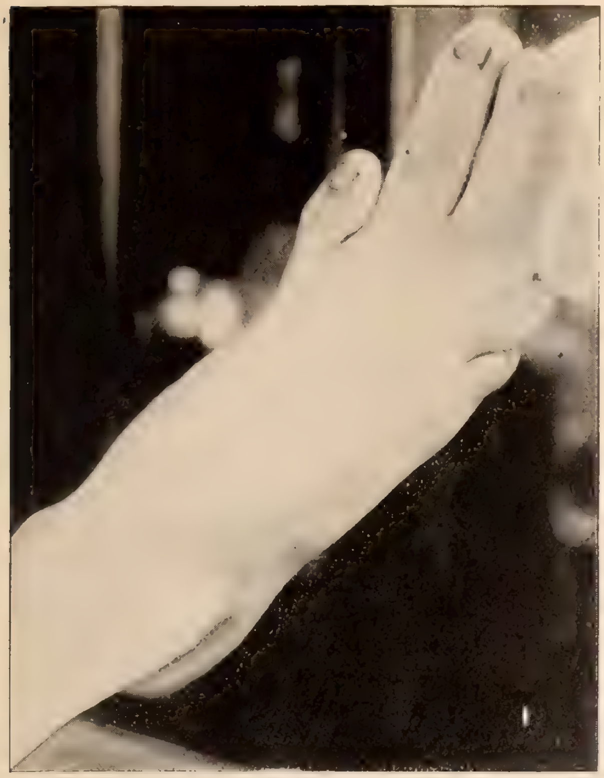

Fig. 31.

April 3, 1891.—The femoral was ligated four inches below Poupart's ligament, with complete success. At his discharge, twenty days later, the patient still complained of pain and numbness in the foot.

J. M., a man, aged forty-four years, with a history of syphilis. He had noticed a swelling on the inner side of the right thigh five weeks before his entrance, gradually increasing, with pain. At the time of his entrance it was as large as an apple, pulsated expansively, and gave a distinct bruit. Double aortic and mitral murmurs were heard in the cardiac region.

August 15, 1891.—The common femoral was tied in two places and divided. The wound healed primarily, and no gangrene resulted.

J. N., a man, aged fifty-three years, gave a history of syphilis thirteen years previous. For two years there had been a pulsating swelling just above the popliteal space on the inner side of the right thigh. It was an aneurysm about two inches in diameter.

March 28, 1892.—The common femoral was ligated with catgut, but not divided. Great pain followed in the foot, which was with difficulty kept warm. Pulsation in the dorsalis pedis was plainly felt on the seventh day after the operation.

June 5, 1894.—The same operation was performed on the left leg, where an aneurysm in the popliteal space which, two years previous, had been as big as a walnut, had now reached the size of an egg. This operation also was completely successful.

The aneurysm in the right leg had shown no tendency to recur. The leg was rather weaker than before, otherwise normal. The general health had been fairly maintained in spite of aortic and mitral valvular disease and an aneurysm of the left subclavian.

Stab Wound of the Groin injuring the Common Femoral Artery; Gangrene of the Foot; Amputation through the Thigh; Recovery.—H. W., a man, aged twenty-three years, received a stab in the right groin, severing the common femoral just at its bifurcation, and nicking the vein. The arteries were ligated and the laceration in the vein was sewed up. The wound healed primarily, but, after a doubtful struggle, the lower two thirds of the outer surface of the leg and the lower half of its tibial surface became necrotic. The patient's health was much influenced by the sloughs, and when he saw the bared bones of the leg he consented to amputation. This was performed on March 10, 1892, five weeks after the injury. The section was made through the femur, just above its condyles, anterior and posterior flaps being formed, the former slightly longer, being used to cover the bone. Union was primary except at one point, and the general health improved rapidly.

Stricture of the Œsophagus following a Burn; External Œsophagotomy; Dilatation; Recovery.—E. B., a boy, aged three years, swallowed a strong alkali when two years of age, and an œsophageal stricture resulted which resisted treatment by bougies and grew steadily worse. Only fluids could be swallowed. All bougies were arrested at eleven inches, and a false passage higher up rendered their use difficult and uncertain.

April 4, 1892.—A two-inch incision was made in the left side of the neck, and an opening made into the œsophagus. The stricture, which was eight inches below the wound (eleven inches from the teeth), was dilated up to 16 F., and a 15 F. soft-rubber catheter passed through the wound was left in the stomach. Through the catheter the patient was fed for three weeks. Within this period the temperature was often as high as 103° F. The stricture was now dilated to 23 F., the catheter was removed from the wound, and feeding was resumed by the mouth. The general condition rapidly improved. Bougies up to 35 F. were passed by the mouth, and in two months from the operation the sinus in the neck was closed. Two years later there had been no recurrence of the stricture and the general health was excellent.

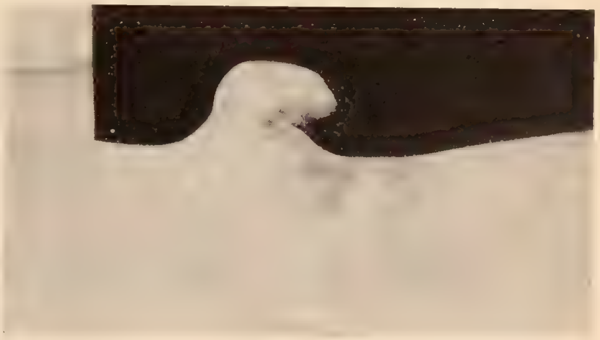

Fig. 32.

Fatty Tumor of the Thigh.—Fig. 32 represents a surgical curiosity which was removed on February 4, 1893, from W. A., a man, aged forty-seven years. It had appeared twenty years previous just above the left popliteal space, and continued to grow slowly at first, more rapidly afterward. It was found to be composed of fibrous and fatty tissue, its peculiar shape being due to the fact that it was made up chiefly of two nodules.

Tubercular Ulcer of the Back; Curetting; Injections of Tuberculin; Improvement.—H. F., a man, aged fifty-six years, had been a victim of tuberculosis for years. Three years before his entrance the right arm had been amputated for tubercular disease of the wrist. It had recurred, and the arm had twice again been amputated. For three years there had been a gradually increasing area of lupus to the left of the lower lumbar spines. On his entrance into the hospital, on November 14, 1890, the diseased area measured seven inches and three eighths by four inches and three quarters. It was curetted and treated with various applications, and diminished somewhat in size. Sections of the excised tissue were pronounced tubercular, and tuberculin was injected in large doses for several weeks with no marked improvement. This was one of twelve cases in which Koch's remedy was employed for surgical tuberculosis with the same unsatisfactory results as were obtained in other hospitals. Fig. 33 shows well the inner granulating zone and the outer zone mostly covered with unhealthy epithelium.

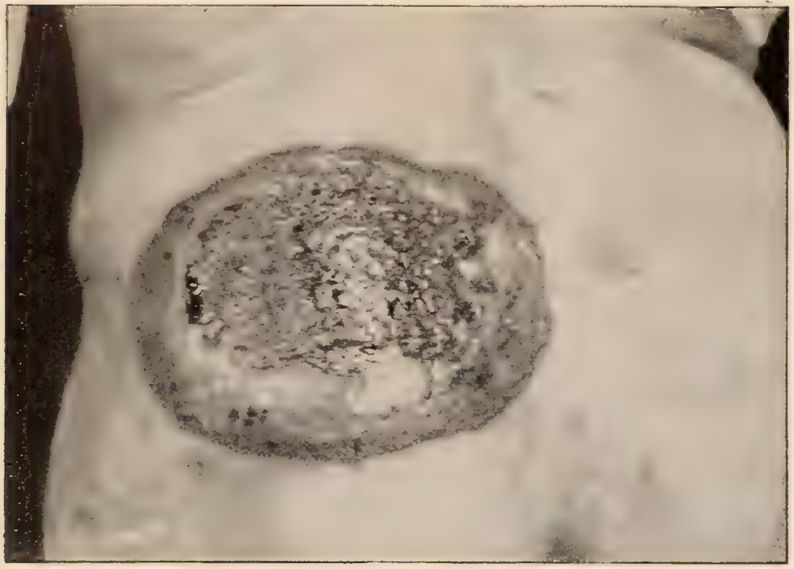

Fig. 33.

PSEUDO-CHANCRE.

By WILLIAM S. GOTTHEIL, M. D.,

DERMATOLOGIST TO THELEBANON HOSPITAL AND TO
THE NORTHWESTERN AND THE GERMAN WEST SIDE DISPENSARIES, NEW YORK.

Few syphilographers doubt the occurrence of syphilitic reinfection, but most of them regard it as an occurrence of extreme rarity. The literature teems with recorded cases; but an exact analysis shows that the vast majority of them are open to grave doubt. They are either cases of manifestly incorrect diagnosis, or they are cases so imperfectly recorded that they lose all value as evidence in this much-disputed subject.

Until the middle of this century the law of Ricord obtained universal acceptance. Syphilitic immunity, once established, was supposed to last during the entire remaining life of the patient, and the exceptions that were noted were so infrequent and so insufficiently proved that they detracted nothing from the validity of the general proposition. Petit, Fournier, and the entire Parisian school accepted it absolutely.

In the year 1858, however, renewed attention to these exceptions was called by Zeissle (1). He showed conclusively that in certain cases reinfection did occur, and that absolute immunity after one attack was not the invariable rule in syphilis any more than it was in the infective diseases of acuter course and similar nature—such as variola, morbilli, etc. He was soon followed by others who collected series of cases of alleged reinfection. Gascoyne (2) had twelve cases; Caspary (3), three; and Diday (4), twenty-five. In more recent times Scarenzio (5), Morel Lavalee (6), E. Feibes (7), Glascow Patteson (8), Salsotto (9), Koebner (10), Pauly (11), Pospelow (12), Diday and Doyen (13), Eichorst (14), Lang (15), Peters (16), Swinburne (17), Fisichella (18), have all reported similar cases.

When we examine these cases critically, we notice especially the paucity and the incompleteness of the history of the so called second attack of the disease. As a rule the sclerosis is the only symptom that is noted, the other manifestations of secondary nature being so mild and uncharacteristic when present at all, that we may well be left in doubt as to the true nature of the so-called chancre.

Sigmund long ago pointed out (19) that there occurred tertiary ulcerations that possessed all the characteristics of the true sclerosis; and Fournier (20) classified several lesions which simulate the initial chancre. Bregeal (21) called attention to gumma of the penis, the frequency of its occurrence rendering it extremely liable to be mistaken for a primary lesion. Von During has observed pseudo-chancres in which an apparently characteristic induration lasted for from five to six weeks, and which were never followed by secondary symptoms. Keyes (22) believes that in most of the recorded cases of a second attack of syphilis a pseudo-chancre was mistaken for a true sclerosis, and Taylor, at a recent meeting of the New York Dermatological Society, expressed a similar opinion.

Finally, the doubt as to the real existence of a *reinfectio syphilitica* has gone so far that Hudelo (23), making an examination of a hundred and forty-eight recorded cases, hardly admits the validity of nine of them. Nevertheless there are a few undoubted cases. Some of those recorded by the authors mentioned above seem to be beyond suspicion, and Hutchinson's case, which occurred in a physician, can not be doubted, more especially as the same patient had had variola twice.

The following lesions may simulate a true chancre:

I. *An Artificial Induration*, such as may be produced under a herpetic or chancroidal ulceration by the use of nitrate of silver, carbolic, nitric, or acetic acids, the acid nitrate of mercury, or even alcohol. This is undoubtedly a frequent source of error, and it requires the strongest corroborative evidence in the shape of other early syphilitic lesions to diagnosticate as a chancre any ulceration that has been treated in such a way.

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* Read before the Section in Dermatology of the American Medical Association, Baltimore, May 8, 1895.

II. *A Nodular Lymphangeitis in Gonorrhœa.*—If phimosis is also present, the nodule can be felt but not seen; and until the glans can be exposed again we must remain in the dark. Even if there is no phimosis, the nodule may be exulcerated, and we must suspend judgment.

III. *Scabies.*—Here lesions on the penis are the rule, and form one of the diagnostic points of the disease. If, now, such a lesion has been scratched or irritated in any way, it is quite liable to be mistaken for an initial lesion.

IV. *A Secondary Induration* occurring late in the disease at the site of the initial lesion. This is the pseudo-chancre of Fournier; and while it is of rare occurrence, it exactly simulates the original tumor.

V. *A Papule or Tubercle* situated on the penis as part of a more or less general specific eruption. This has to a certain degree the same characters as the chancre, being a small-celled accumulation of similar morphological characters.

VI. *An Ulcerating Gumma.*—This is especially likely to deceive when situated on the corona, where induration is with difficulty determined. Of not infrequent appearance in late syphilis, its beginning as a submucous induration and its hard base and border when ulcerated cause it to simulate an initial lesion very exactly.

VII. *An Epithelioma.*—In certain cases the exulcerated tumor with glandular involvement may render the diagnosis difficult.

All of these pseudo-chancres are fertile sources of error in diagnosis. All of them may look so like a true chancre as to deceive even an expert. Some necessarily occur in patients already syphilitic; in others, the patient may or may not have had the disease.

The two cases of which I present you models and photographs are cases in point. Both were regarded as initial lesions by competent judges; the first one might have been recorded as a case of true sclerosis without subsequent systemic infection, while the second was apparently a case of true *reinfectio syphilitica*.

Case I.—R. H., a German, forty-four years old, of robust physique and healthy color, came to me in the beginning of September, 1893, to consult me concerning a sore, an ulceration on the frænum and the under surface of the sheath of his penis.

His history was as follows:

He was a married man, with a perfectly healthy wife; and he had not been delving in extra-marital fields. This usually valueless statement acquired some little importance when I got to know him intimately, as I did later on, and to appreciate the happiness of his home life and his character for veracity. He was quite at a loss to account for his sore, unless it had been acquired in a way which I personally believe does sometimes occur in spite of the ridicule that is heaped upon it. The son of the man in whose office he was employed was suffering from an enormous sclerosis of the under surface of the glans, which subsequently became phagedænic; he was under my care at the time, and developed later on so bad a general papulo-squamous general syphiloderm that I sent him to Aix-la-Chapelle to get him out of the way of his friends. This boy was in the habit of dressing his sore while sitting on the only water-closet belonging to the office, and spending a considerable portion of the day at that agreeable occupation. All the employees of the office knew exactly what was the matter with him, and they were loud in their complaints at the dangers that they supposed they were compelled to run. H. did not contend that this was the source of his infection, but he knew of no other way to account for it, and the situation of his sore was exactly on the spot where one would expect it to be had an accidental inoculation occurred in the manner indicated.

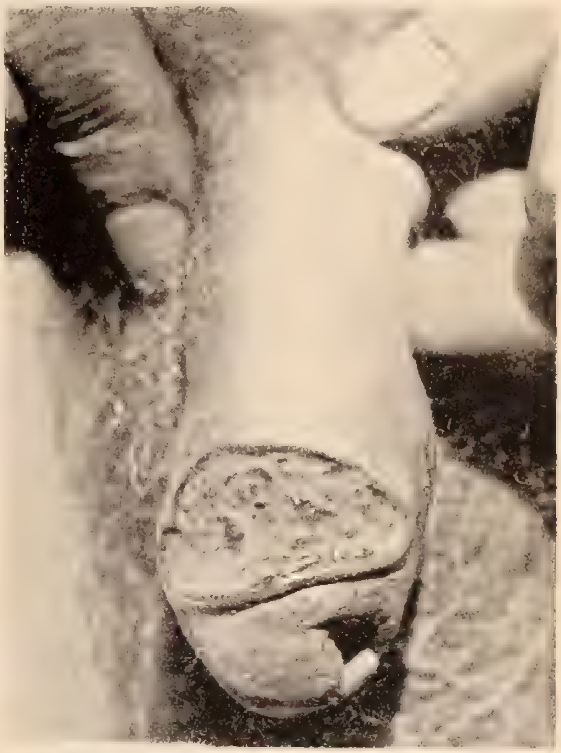

Fig. 1.—Pseudo-chancre. Indurated lesion simulating chancre. Complete history of syphilis three years before. Ulceration a month old, spreading. Other evidences of tertiary syphilis present. Rapid cure of the sore under iodide of potassium internally. G. W. S. D., March, 1895.

He first noticed a little lump in the frenum at about the end of July; it gave him no trouble at first, but grew rather rapidly, and soon began to ulcerate. The physician whom he consulted diagnosticated a syphilitic chancre, and treated it with vaseline for a week. It grew steadily worse, however, spreading in size and increasing in hardness; the ulceration became deeper and the discharge more profuse. Bubo was not present, nor was there any pain. His physician then changed his diagnosis to that of chancroid, and used the nitrate of silver stick, followed by powdered boric acid. This cauterization was repeated twice in the next four or five weeks, but the sore continually increased in size.

The patient then consulted a specialist in a neighboring city, who also declared the ulceration non-specific, and touched it up with nitric acid, dressing it afterward with aristol. Nevertheless there was no improvement; the ulceration progressed.

On September 11, 1893, I saw him for the first time. The penis was œdematous to a considerable degree, and situated at the frænum, and on the sheath just below it, was a large, irregular ulceration. It was oval in shape, with its long diameter transverse to the shaft of the penis; it was fully an inch and a half broad and an inch in length. The cast that I show you was made some time later, when the healing process was already well advanced; it is less in size than when I first saw it, but it shows the characters of the ulceration with fidelity. From the main lesion a thin line of ulceration extended up along the frenum on to the lower surface of the glans, and here was situated a second smaller ulceration similar in character to that below.

The base of the ulcer was clean and fairly well covered with granulations. The margins were sloping and not undermined. Most characteristic, however, and most striking was the induration. It was very marked, brawny to the touch, and sharply circumscribed from the surrounding tissue. On the glans it was, of course, not so marked, but still perfectly evident. The entire mass was apparently a well-defined tumor, with superficial exulceration. It was a typical sclerosis as far as the physical signs went.

The only other sign was a bilateral adenopathy. The inguinal glands in both groins were tumefied, hard, and painless. Though not as stony as we frequently see them in the infecting chancre, they were not the painful, enlarged buboes of chancroid.

Other symptoms there were absolutely none: neither general adenopathy, rheumatism, defluvium capillorum, nor exanthem. The ulceration had been present for seven weeks.

There was great apparent resemblance of the tumor, ulceration, and inguinal adenopathy to an initial syphilis, and I was naturally inclined to diagnosticate chancre, though I felt by no means certain that that was the case. I applied an iodoform dressing and awaited results. I kept the patient under careful observation, seeing him almost daily.

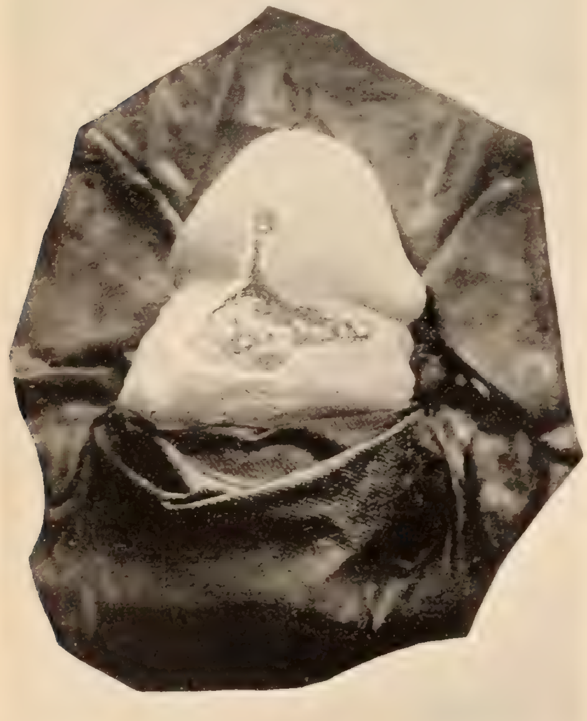

Fig. 2.—Pseudo-chancre; herpetic or chancroidal ulceration with artificial induration. Cured with calomel locally; no internal treatment; no signs of syphilis (1893).

In one week's time it was very evident that the iodoform was doing the patient no good; the ulceration was extending. Calomel was then used, and with a marvelously satisfactory result. Improvement commenced at once, and throughout was unbroken. The ulceration steadily healed, but the induration remained unaffected. By November 1st cicatrization was complete; but a marked and apparently characteristic induration, larger than a large bean, still remained. This was still present, though smaller, on January 1, 1894.

Meantime I watched the patient very closely for the slightest appearance of anything that would indicate systemic infection, but without finding it. The examinations were not infrequent and not perfunctory. The entire integument and all the cavities of the body were closely scrutinized. At the present writing, nearly two years after the first appearance of the sore, I am able to say that there has never been the slightest symptom of secondary syphilis.

Unless we are willing to admit that a chancre, accompanied by inguinal adenopathy, may be the only result of infection with the specific virus, we must regard the lesion in R. H.'s case as a false or pseudo chancre belonging to the first class of artificial indurations; and this in spite of the very clear history of its beginning as a subcutaneous nodule given by the very intelligent patient, and in spite of the hardness, painlessness, absence of chancroidal bubo, and cure by calomel powderings. Whether it was originally a herpes or a chancroid it is impossible to say, but it falls within the category of those cases that I have ventured to call pseudo chancres.

Case II.—F. M., aged forty-one years, a tall and thin but otherwise fairly healthy looking man, consulted me on March 20th of this year for an ulceration on the lower surface of his penis. Though only a mechanic, he is a fairly well educated German, and he gives a very clear and precise history of his case as follows:

Three years ago he had a chancre, which was soft at first, but subsequently became quite hard. It appeared exactly four weeks after intercourse, and the scar that it left on the glans penis is still visible. It was a lump as big as a bean, or larger, and was treated by the physician to whom he went with "gray ointment." After a time it ulcerated, but the hardness lasted fully two months after the ulceration had healed. A few weeks after the appearance of the tumor an eruption of pimples appeared all over his body, for which the doctor gave him "drops." He had also persistent headaches, a bad sore throat, and falling of the hair. In fact, he gives a circumstantial and complete account of syphilitic infection at the date mentioned. Since that time he has had occasional eruptions of pimples on the body; but he got tired of taking medicine, and has had none at all for two years past. The spots always went away of themselves in time.

He complains now of a sore that appeared on his penis some four weeks ago and which he calls a chancre. Examination shows the presence of a kidney-shaped ulceration situated on the under surface of the penile sheath near the preputial orifice. Its concavity is toward the preputial opening, and it measures an inch and three quarters by one inch. Its margins are extremely distinct, raised, and rounded; its edges are sloping; its base is covered with granulations intermixed with a small amount of necrotic tissue. The tissue immediately around and under the ulcer is distinctly indurated, and, while not very hard, it is sharply limited and can be readily differentiated from the soft tissue of the sheath. The ulcer has been gradually increasing in size since it began, but there has been no pain, nor has it inconvenienced him in any way. There has been no treatment.

Examination of the patient's body revealed the following facts: There is a slight inguinal and cervical adenopathy, otherwise the glandular system seems normal. On the glans penis is a distinct scar, which the patient says is the mark left by the initial lesion of three years ago. At three or four places on the trunk and limbs are groups of characteristic large papular lesions which tend to spread peripherally. They have been present for several weeks, and the largest and oldest are covered with a crust, the removal of which reveals central breaking down. On the anterior surface of the left wrist is a distinct gumma one inch in diameter. It was opened some five weeks ago by a surgeon under the impression that it was an abscess. Besides this there are on various places over the body groups of small circular cicatrices; some, the more recent, are still pigmented; others are white and atrophic.

The patient, then, has a florid syphilis in its tertiary stage, as is evidenced by the unsymmetrical papular eruption and the gummata. He has a gumma of the penis which presents enough of the characters of an initial lesion to be mistaken for one, especially on a hasty or superficial examination. He had what I may venture to call a pseudo-chancre, inasmuch as it looks and feels like a real one.

There is, so far as I am aware, no characteristic sign and no combination of signs that will enable us to diagnosticate chancre. Only the advent of other symptoms in their proper order gives us data to form an opinion as to the existence of systemic infection or not, and we must look with grave doubt on all reported cases of syphilis with indefinite and badly marked secondary symptoms, such as almost all the cases of *reinfectio syphilitica* are.

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37 West Fiftieth Street.

A Deodorizer for Iodoform.—The *Lyon médical* for August 25th remarks that the odor of iodoform, if not dangerous, is very noticeable and annoying. The oil of turpentine causes this strong odor to disappear immediately from anything with which this antiseptic has come in contact. The hands may be first washed in water to which some turpentine has been added, and afterward with soap and water, and it will be found that the odor has entirely disappeared.

THE THERAPEUTIC ACTION OF HOT SULPHO-SALINE WATERS,

WITH SOME PERSONAL OBSERVATIONS MADE AT GLENWOOD HOT SPRINGS *

By LEWIS R. MORRIS, M. D.

When one considers the action of mineral waters in disease, either the internal or external use, the attention is at once directed to their chemical composition.

It is a well-known fact that a natural water often has a very different effect from the artificial water manufactured with exactness from the analysis of that water, and that the water when used at the spring often differs in its action from the water which has been bottled.

Why is this so? In the first place, in the chemical analysis, the acids found are generally assigned to the bases contained in the water for which they have the greatest affinity. It is probably true that these combinations do not so exist in nature, and that the salts are a nascent form which is acknowledged to be most powerful.

Secondly: In hot springs in which the water is strongly charged with gas, it is more than probable that various combinations exist, made possible by the heat and gas, which do not exist after cooling and effervescence of the gas and exposure to light and air.

This would explain some of the effects obtained from hot sulphur saline waters in general, and in particular those of Glenwood Springs, which I have observed and which one would not necessarily expect to follow from the chemical analysis. The following is the analysis of Yampah Spring at Glenwood, Col., by Professor Chandler:

In One United States Gallon of Two Hundred and Thirty-one Inches of Water.

Chloride of sodium.........	1089·8307 grains;
Chloride of magnesium......	13·0994 "
Bromide of sodium.........	0·5635 grain;
Iodide of sodium...........	trace;
Fluoride of calcium.........	"
Sulphate of potassium.......	24·0434 grains;
Sulphate of calcium.........	82·3861 "
Bicarbonate of lithium......	0·2209 grain;
Bicarbonate of magnesium...	13·5532 grains;
Bicarbonate of calcium......	24·3727 "
Bicarbonate of iron.........	trace;
Phosphate of sodium........	"
Biborate of sodium.........	"
Alumina..................	"
Silica.....................	1·9712 grains;
Organic matter.............	trace.
	1250·0411

In weighing in one's mind the effect of treatment of disease at various springs and water-cure establishments, it is natural to believe that a great deal of the good that is undoubtedly accomplished in various pathological conditions is often due to the rigid régime and the improved hygienic surroundings. This, I confess, was largely my opinion of the explanation of the results so obtained when I happened by chance to have my attention called to Glenwood Spring and the curative effects of its waters in some diseases. But when I observed that a large number of patients were cured of rheumatism, gout, lead poisoning, syphilis, and disorders of the digestion and of the skin, while not following any régime or any restraint of diet, I was convinced that the results were largely due to the waters, climate, and high altitude.

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* Read before the Hospital Graduates' Club.

Below are some of the therapeutical actions of hot sulphur saline water as I have observed them at the Glenwood Hot Springs.

The Skin.—One of the most striking actions of this water and vapor is upon the skin. After taking a hot bath, temperature 98° to 100° F., or after being in the Vapor Cave from fifteen to thirty minutes, temperature 110° F., during which time there is in the bath an unconscious and in the caves a most profound perspiration, if a patient is wrapped in a single blanket and rests in a moderately warm room, the perspiration will apparently continue indefinitely. This perspiration is evidently not simply from the heat, as it is much more intense than that derived from a simple hot bath or a Turkish bath. Consequently it becomes imperative that the skin should be cooled by a cold shower bath or that the patient be rubbed with alcohol after bathing, to close the pores of the skin before going out, and should rest until such action of the skin ceases; although in that dry climate there does not seem to be much danger of contracting colds from excessive perspiration and sudden cooling of the skin.

I confess I am at a loss to explain this marked stimulation of the sweat glands; the vapor of this water has not yet been analyzed, but it has a strong odor of sulphurous acid and very little of the odor of sulphureted hydrogen. This action of the vapor and water undoubtedly explains largely the beneficial effects obtained in rheumatism, gout, syphilis, and lead poisoning. It is interesting to note that this vapor continually deposits pure sulphur on the walls of the cave.

Though normally the sweat contains very little urea, it contains proportionately a larger amount of the fatty acids —viz., formic, acetic, propionic, and butyric—which Latham (1) has shown are derived, as are lactic and uric acids and urea, from different condensations of the cyan-alcohols of the system. This is, I believe, a most important fact showing the value of the sweat as an excretion. Halliburton (2) states that in rheumatism albumin and uric acid, and in gout urates and calcium oxalates, are found in the sweat. One of the most striking symptoms in rheumatism and gout is the marked perspiration, which is undoubtedly Nature's effort to reduce the high temperature when there is any, to throw off the poison, and to relieve the kidneys of some of their extra work. The improvement in uræmic coma often following a hot-air bath is too well known to need any comment.

If the above-stated facts have any significance, it would prove that an increased action of the skin must be of great importance in the cure of rheumatism and gout. In syphilis, this action of these waters has in many cases been most remarkable, as will be seen from some of the cases reported, and it unquestionably increases the elimination of hydrargyrum and kalii iodidi and allows large doses of the same to be given both by mouth and inunctions, which is the method advocated at Aix-la-Chapelle at present. Though it is popularly maintained in Colorado, as it is in Japan and Europe, that these hot sulpho-saline waters cure syphilis without the use of iodide of potassium or mercury, yet the experience of Dr. Hobhouse, for several years resident of Glenwood, and of Dr. Clark, for many years a practising physician there, is that though many syphilitics come there in a very bad condition, and after one or two months' treatment go away apparently cured, without the use of the iodide and mercury, yet they are apt to have some recurrences. Their experience coincides with that of the leading physicians at Aix, that a more complete and permanent cure is established if the iodide is given internally and the mercury given by inunctions, and that the baths in the water and vapor enable the patients to stand a much larger dose.

The action of the skin in lead poisoning is apparent from the fact that the water is discolored when bathed in by severe cases; and in cases of nicotine poisoning the underclothes, when worn in the cave, become distinctly discolored and smell strongly of tobacco.

It is evident that this water will dissolve and remove the fats from the skin. Unna's (3) experiments show that inunctions of fats cause decrease of perspiration and retention of body heat, and drive large quantities of fluid to the kidneys, while removal of fat diminishes body heat and prevents overloading of the kidneys, and Arrogan (4) proves that the scalp, face, back, and chest are constantly covered with fat. This would, with the profuse diaphoretic action of the water and vapor, explain one of the elements which are of benefit, as shown in the reported cases of kidney disease.

The exact action of this water on the structures of the skin, beyond removal of the cast-off epidermis and the resulting "velvety" feeling after a bath, I am unable to state; but Dr. Blickensdorfer, of Denver, a very careful observer, says that "in eczema and skin affections in general, such as are produced by poisonous or irritating influences from within the body, as those occurring in Bright's disease, rheumatism, and gout, in syphilis, cirrhosis of the liver, and other hepatic diseases, in ptomaine poisoning and disturbances of the chylopoietic system, all of which require both the internal and external use of these waters and vapors," he has been pleased, "especially in the chronic cases, with the great benefit received in almost every case of a large number which he has sent to the springs for treatment."

It is interesting here to note that Blickensdorfer refers to the effect of the waters on the skin affection which sometimes follows poison wounds. Two physicians whom I heard of had been there, and were completely relieved of the skin affections which followed poison wounds. This opens up an interesting field of thought as to what is the function of the skin in eliminating the various germs and their ptomaines from the body in disease. As Brunner (5) has shown, with regard to anthrax, the *Micrococcus prodigiosus*, and the *Staphylococcus pyogenes aureus* were found in the sweat after inoculation.

The action of the skin in disease, and the treatment of disease by encouraging a normal action of the skin, has, I think, been too little studied in the past.

I strongly believe that it is due to the elimination of bacteria from the system by the skin, and also to the increased action of the absorbents from the hot baths, that the really wonderful effects in gonorrhœal rheumatism are produced.

Below is an illustrative case:

G., aged twenty-four years. He has had gonorrhœal rheumatism for six months. Is hardly able to move, and has had successive joints involved—wrists, ankles, and knees. Has been to several hot springs, with little or no relief, nor has he received any from medication. After six weeks of cave baths with massage, pain and swelling were nearly gone. In two months he went away practically relieved.

The Digestive System.—The action of this sulpho-saline water on the digestive system is in some respects even more striking than its action on the skin. This seems to be due to the direct and soothing effect on the mucous membrane and also to the stimulating action on the liver.

In the catarrhal conditions of the throat and nose these waters have a most soothing and healing effect, which is certain, even if only temporary. A physician (whom I saw there) with advanced syphilis, with necrosis of the nasal bones and of the superior maxillæ, who had been to several hot springs in this country, and who had been under the treatment of various well-known specialists in New York, being one of those unfortunates who could tolerate little or no iodide or mercury, stated that the use of the water and the inhalations of the vapor gave him great relief and stopped the offensive discharge in a most striking way. The patient, I am happy to say, after a course at the springs, entirely recovered under a treatment of vapor baths and inunctions of mercury, and is to-day entirely cured, though when I met him there, having previously known him in New York, he said that he had had no benefit whatever from any treatment or from the springs he had visited, and was practically without hope.

In the analysis of this water there are, as I have before stated, twenty-four grains of potassium sulphate and two grains of calcium sulphate, thirteen grains of magnesium chloride and thirteen grains of magnesium bicarbonate. It is due, probably, to these salts that the action on the liver and intestines is obtained.

A glass or two taken either hot or cold, preferably hot, in the morning before breakfast seems to increase the appetite, and in cases of dyspepsia and vomiting resulting from gastric cararrh, to relieve the nausea. After the meal it produces one large and copious stool without any griping; even in cases of chronic catarrhal gastro-enteritis, which usually have numerous daily evacuations, there is rarely more than one movement.

These evacuations seem to be loaded with bile, and in the case of two patients with sluggish livers, whom I saw last summer, their tongues became absolutely clean for the first time in the several years I have known them, after from two to three days' use of the water. In aggravated cases the water can be used oftener—viz., before each meal—but generally once a day before breakfast is sufficient.

Eskridge, of Denver, says in a letter to me that "in neurasthenia, associated with atonic dyspepsia, torpidity of the liver, and constipation, and in persons suffering from inactivity of the gastro-intestinal tract produced by sedentary habits" he has found in both his private practice and in the hospitals in Denver "a decided improvement in the stomach, bowels, and liver in a weak or ten days' use of the Glenwood water"; also that "this water seems to act well in chronic catarrhal conditions of the stomach, but in overcoming chronic and obstinate constipation I have had no success with it."

Hobhouse, however, reports two cases of obstinate constipation which were seemingly cured by the use of the water.

There is, however, one fact that is attested by all patients—viz., that a continued use of the water does not seem to leave them at all constipated after stopping its use. Blickensdorfer, of Denver, in a letter to me says that "in catarrh of the throat and nose, gastro-intestinal catarrh, and the ill effects following cirrhosis of the liver and other hepatic diseases," in cases which for several years he has sent there, he has been pleased in almost every instance with the benefit they have received.

A short history of a case may be of interest.

A. B., of Boston, sent to Colorado for chronic catarrhal gastro-enteritis, with frequent mucous movements, which had troubled him for six or eight years; had lost in weight, and thinks that physicians in Boston suspected consumption of the bowels; drank a glass of Glenwood water each morning, which produced only one free evacuation, and took baths for six weeks. Diarrhœa ceased, he gained in weight, and since then, when from errors of diet he has had a return of the trouble, he drinks a glass of the water for a few mornings, which invariably cures him.

The Kidneys.—The ingestion of large amounts of hot water is in itself a diuretic, but I believe that certain of the salts, besides the slight amount of lithia found in these waters, are diuretic in their action, for drinking the water seems to increase the amount of urine voided, besides producing a large and watery evacuation. In addition to this, the action of a hot bath as a stimulant to the action of the kidneys is well known.

As I have before stated, the resemblance of the waters of Glenwood to those of Aix-la-Chapelle is so great that what would apply to one would also apply to the other. Beisse and Meyer, in their researches at Aix-la-Chapelle, by practical experiments have found that not only the drinking of the hot saline water, but also douching, increases the excretion of uric acid. Beisse has also shown that after drinking the waters to the extent of twelve hundred cubic centimetres, or about five glasses daily, the excretion of uric acid is increased from between 0·4 per cent. and 0·7 per cent. to about 1·25 per cent., and that after douching it is increased to one or two per cent. in twenty-four hours. This clearly shows one of the reasons why drinking and bathing in hot sulphur alkaline waters benefit cases of gout. Monod (6), in Aix-en-Savoy (6), finds that a hot vapor bath followed by gentle exercise in the pool at 34° C. increases the amount of urine voided and diminishes its acidity. A. Robin (7), in some physiological experiments, shows that a bath in hot salt water of a solution of twenty-four per cent. increases nitrogen metabolism and oxidation of nitrogenous substances, and decreases metamorphosis of tissue rich in phosphorus, and therefore theoretically should be, as it is proved practically to be, useful in scrofula, rhachitis, rheumatism, and gout.

N. Makovetski (8) finds that this same action is observed in the use of hot sulphur water, and Dronke (8) observes that the internal and external use of sulphur water increases the nitrogen in the urine.

Florian (9) and Baruch (10) highly recommend the daily use of warm baths in kidney disease.

Therefore it is easily seen how the use of this class of mineral water and vapor baths is valuable in disease of the kidney:

1. From their action on the liver, increasing the excretion of bile and the conversion of the cyan-alcohols into urea.

2. From their action on the skin in eliminating urea and the fatty acids derived from the cyan-alcohols, and directly relieving the work of the kidneys.

3. From the direct diuretic action on the kidneys and the evident action, according to the above observations, of increasing the nitrogen in the urine. Dr. Hobhouse, formerly resident physician at Glenwood, in a paper read before the Colorado State Medical Society, reports the cases of two persons with nephritis—one with blood casts, pus, and tubercle bacilli in the urine, who in a few weeks left markedly improved, and has since then gone on improving, and, though there were still bacilli in the urine when he left, the blood, which had persisted for months, had entirely disappeared with most of the pus; and another with nephritis complicated with extreme dropsy of the legs and abdomen, who was relieved entirely of the dropsy after the fifth or sixth bath.

Florian (16) and Baruch (17) report reasonably good results in kidney disease from the daily use of warm baths.

The Circulatory and Nervous Systems.—There has been a great deal written on the subject of the use of hot baths in the various forms of cardiac disease, but this treatment is still in an experimental stage.

T. Schott (12) recommends highly the use of hot saline baths, temperature 95° and over, for cardiac incapacity. Frey (13) has also found that in various forms of cardiac diseases the use of hot baths is decidedly beneficial. Most of the medical profession have a decidedly erroneous impression as to the effect of high altitude on the heart. In the healthy subject the heart's action will increase from 60 and 70 to 80 and 100 beats a minute, and the respiration from 18 and 20 to 24 and 30 without exercise. When violent exercise is taken this increase in the pulse and respiration is much greater.

In valvular lesions, with cardiac compensation, there does not seem to be any discomfort, and this is borne out by the opinions of several physicians with whom I talked on the subject in Colorado.

But it is considered unsafe for a person with fatty degeneration of the heart and with atheromatous vessels to venture from a low altitude to a very high one.

Baelz, of Tokio (14), in observations on the hot sulphur saline baths of Kusatsu, in Japan, says that hot baths increase the frequency of the pulse and cause the blood-vessels to become dilated and lose their elasticity. It is this action, together with the effects of massage, which Fançon (15) says largely explains the relief in rheumatism and gout obtained at Aix-les-Bains, as the sweating and abundant hot douching during massage used there cause dilatation of the superficial blood-vessels, stimulate the lymphatic system, and facilitate the flow of blood and consequent absorption. It is probably this action, with the well-known soothing effects of hot baths on the nervous system and the eliminating and stimulating effect of high altitude, which explains the beneficial action of the use of this class of water in sciatica, of which the following is an illustrative case:

X. Y. Z., 1893. Had had intense pain in the sciatic nerve for many months, and been treated in Denver with massage and electricity, which had somewhat improved his condition. When I saw him, in August, he was in bed, with a long fixation thigh splint. There was still some exudate along the sciatic nerve, and pain in the muscles of the thigh and the calf of the leg. His general condition was bad, as he was suffering from malnutrition and marked neurasthenia. Bowels constipated. Ordered the water to be taken internally every morning and gave baths with a Charcot's douche and massage each day. In ten days he was able to get on horseback and ride from ten to thirty miles every day on a hunting trip.

Eskridge, of Denver, recommends the use of the cave baths in the nervous prostration, so called, which follows the severer attacks of *la grippe.* "The appetite is at once improved, sleeplessness is relieved, and the general soothing effect is almost at once noticed." Hot sulphur saline waters of this class—viz., the springs of Aix-la-Chapelle, at Kusatsu, and at Glenwood—are popularly regarded to be a specific in the treatment of syphilis and gonorrhœal rheumatism. The experience of physicians at Aix, however, is that, although the symptoms are usually relieved by a course of treatment of baths and vapors very rapidly, even more so than by medication, yet, after a more or less long period of time, the disease progresses, and they are therefore of the almost unanimous opinion that the treatment of baths should be supplemented by the use of mercury and iodides. The mercury is given preferably by inunctions and hypodermic injections, and well-diluted iodide of potassium by the mouth, the increased activity of the skin, circulation, and kidneys favoring their absorption and elimination. The fame of Aix and Kusatsu in the treatment of syphilis is centuries old, and in Japan it has only recently been supplemented by the use of mercury and iodides. In these two places alone, probably, hundreds of thousands of patients have been cured of this disease. The experience at Glenwood certainly bears out what has been found of the other waters of this class.

Personally I have had an experience with four cases of syphilis, of which the one before quoted was by far the most severe. They all were satisfactorily benefited. In two cases of severe gonorrhœal rheumatism of which I had a personal knowledge the benefit was rapid and remarkable. As all physicians know how tedious and long the course of this disease usually is, it certainly seems remarkable that one case was cured in two weeks, and the other, which had lasted six or eight months and had resisted all other forms of treatment, was cured in six weeks.

This, as I have endeavored to show, is brought about by the effect on the system of several factors, which I think applies to all the various pathological conditions that are benefited by this class of water, and which factors are, it seems to me, most favorably combined at the Glenwood Hot Springs of Colorado. Below is a *résumé* as I believe them to exist:

1. The pure air and high altitude, which increase the elimination of carbonic-acid gas and the oxidation of the blood and the number of respirations a minute.
2. The comfortable and well-managed hotel and the distance from the large cities, which tends to relieve the mental worry and excitement.
3. The marked diaphoretic action on the skin, relieving the work of the kidneys and eliminating the waste materials from the blood resulting from the condensation of the cyan-alcohols.
4. The action on the liver from drinking the water increasing the excretion of bile.
5. The correction of the catarrhal condition of the stomach and intestines, increasing the appetite and the assimilation of food.
6. The increased action of the circulation and the absorbent system.
7. The evident soothing effect on the nervous system of the vapor caves in an excited or inflamed condition of the nerves and the stimulating effect on a general nervous depression.

Finally, it may be said that probably in no disease are these waters a specific unless it be in lead poisoning. Below is a typical case of many hundreds which have been treated in Glenwood, as it is in the silver lead belt of this country:

John D., aged fifty-two years, an employee in one of the smelters at Leadville, six months ago was severely "leaded" (plumbism), and received no permanent benefit from medical treatment there. Came here ten days ago (November 28th) with all the pathognomonic signs, the blue line, obstinate constipation, and the typical drop in both wrists. Could not wait on himself in the least. This morning (December 8th) he calls himself well and wants to go home. No medicine given whatever, only using the waters externally and internally.

In another form of disease intractable to ordinary treatment, I would like to report, with the kind permission of Dr. Clark, who furnished me with theese notes, the following cases:

Case I. *Rheumatoid Arthritis.*—B. S., aged sixteen years. Wichita, Kan., October 18, 1894. Family history not specific. Father now suffering from tuberculosis. When seven years old fell and hurt left knee. All joints except shoulders gradually swelled; left knee dislocated by contractures. Right heel is drawn close to the ischium, and both hips and right elbow flexed and ankylosed. Free from pain, and internal organs healthy.

December 30, 1894.—Has taken cave baths daily, and has wonderfully improved, gaining in weight and strength, and the swelling of the joints is diminishing.

The later reports are that he is now able to sit up and feed himself, and is still gaining in weight. The size of the joints is growing less, but, of course, there is no improvement in the ankylosed joints.

Case II.—Trixy S., aged five years, sister of B. S., when ten months old injured her spine in the dorsal region. Did not walk until three years old. Hamstring muscles then began to contract until the legs were flexed at right angles to the thigh. She was taken to Indianapolis, and the legs were forcibly straightened and put in plaster-of-Paris splints. She was somewhat benefited, but, the mother's means being exhausted, they returned to Wichita, where the child slowly grew worse. Through friends she was enabled to go to Glenwood.

October 18, 1894.—Status præsens: Can not walk ten feet; joints of fingers enlarged, but no ankylosis. Hamstring tendons very sensitive, and muscles of both legs slightly atrophied and very weak. Bodily functions normal.

Her mother carries her to the cave baths daily. From the first, improvement was as surprising as it was satisfactory. In a few weeks she was able to run about and play.

December 30th.—Plays now all day and runs about. Walks every day a mile and a half without fatigue. Muscles are filling out and tenderness has disappeared, and she seems really a new being. Finger joints still enlarged, though somewhat smaller.

Later reports from this patient are that she is still improving, and that the size of the finger joints is slowly diminishing. No medicine was given in either case, and no systematic massage used.

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ELECTROVIBRATORY MASSAGE OF THE EAR, NOSE, AND THROAT.

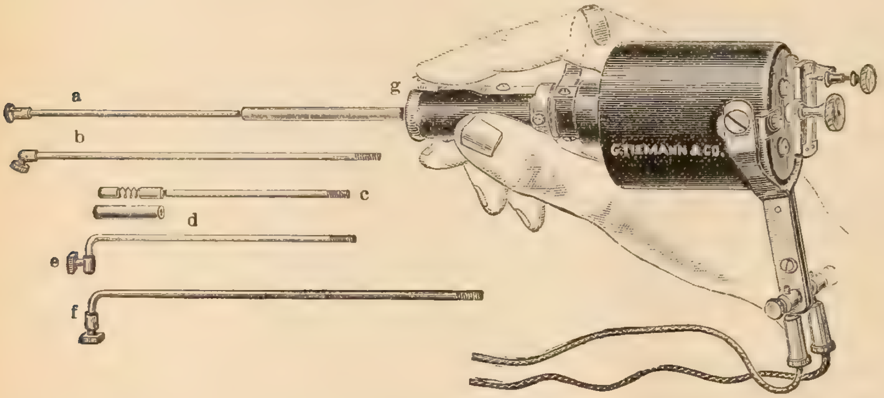
By W. FREUDENTHAL, M. D.

The instrument which is shown in the following cut has in its essential parts been described by me in the *Medical Record* of July 22, 1893. As some new and not unimportant features have been added to it, I thought it best to reproduce the whole apparatus here. I shall not now discuss the question of the value of internal massage of the mucous membranes of the nose and throat. Every one interested in this question I refer to Dr. Paul Garnault's interesting book, *Le massage vibratoire et électrique*, etc., Paris, 1894.

It may suffice to say that nowadays this method has become a valuable therapeutical measure in the hands of many laryngologists and otologists. Various means and instruments have been advised here and abroad for this purpose.

The accomplishment of *manual* vibration is extremely difficult, so that Laker warns one not to be discouraged at lack of success in the beginning, and encourages by the promise of *success after a few months of daily practice.*

There are three conditions without which no internal massage can be successful. The vibrations must be extremely rapid, they must come at regular intervals, and must be of the same intensity. How difficult it is to fulfill these three requirements, every one who has tried it once will agree with me. In fact, I only know of very few men who have acquired it. All the difficulties, however, are overcome by using my electric vibrator. Its mechanism is, in short, as follows:



Two magnets occupy the interior of the box. Around these magnets coiled wire runs in manifold windings. Between these two magnets a rod is placed destined to move forward and backward; at its rear end an iron plate is fastened, and to this is attached a movable metal plate. To the front end of the rod is screwed a detachable part, which I call the probe *a*, the button of which is movable. The index finger slips into a holder (see cut) which is attached to the neck of the instrument, the box resting between the thumb and the index finger of the operator. Two little screws at the lower part are points of attachment for the electric wires. On the neck is placed a metal spring which holds the ivory button *g*. When this is pressed upon by the tip of the index finger the current is closed and the iron plate is drawn forward by the magnet, which at the same moment has become electro-magnetic, and, as a matter of course, the rod holding the probe is drawn forward also. As soon as the iron plate has reached its foremost point the contact is interrupted directly before the screw, and the iron plate falls in its original place, driven by spring power. The next instant the current closes again, and the mechanism repeats itself over and over. The quantity and quality of the vibrations can be regulated by a set of screws attached to the rear of the box.

To use this instrument neither practice nor dexterity is necessary. Any person accustomed to use instruments can operate it at the first trial. I generally illuminate the parts I am vibrating, and agree with M. Braun, inasmuch as I combine massage with effleurage. To vibrate the nose, I dilate the nostrils with a speculum and use probe *a* or *b*. I found it necessary to construct probes of different sizes for the nose as well as for the throat, as one size was not convenient for all patients.

Of late I have become accustomed, when applying internal massage to the nose, to first illuminate the parts when introducing the instrument, and then work in the dark, depending upon my own *tactus eruditus.* In this way one does not need to hold the speculum in place during the whole manipulation, and thus makes it less tiresome for the physician as well as for the patient. In the pharynx, however, illumination is absolutely necessary.

When I intend to treat the sæptum, or parts lying sideward, I turn the button of the probe toward the right or left. But if the patient is directed to turn his head to one side instead, this is often unnecessary.

To massage the oropharynx, I also use probe *a* or *b*, with straightened end. For the retropharynx I apply probe *e* or *f*, placing its button end either straight or upward, as shown in the figure. When I place the probe not at right angles to the part to be massaged, but at an acute angle, or parallel to it, the instrument does not tap, but rubs the part.

To produce direct vibration of the membrana tympani, Dr. John C. Lester, of Brooklyn, constructed a very ingenious apparatus (see *New York Medical Journal*, June 8, 1895). There are two reasons, however, which make this apparatus at least inconvenient. Firstly, the motor being directly attached to the sound, makes the instrument rather heavy; but this objection is of minor importance than the fact that, secondly, one has to employ *both* hands to manipulate the instrument. This is surely inexpedient, as it is impossible to see what you are doing. And this I consider of great importance when you make vibrations to such a delicate membrane as the membrana tympani, especially as the vibrations are not manual but electric. The oscillations caused by the latter you can not always either feel or control.

As this pressure sound, however, has proved to be beneficial in many cases, I simply had it attached to my own vibrator and it works very well. (See cut, *c* being the sound, which can be screwed on to the instrument, and *d* the shield of it.) I have tried it repeatedly and can recommend it to the profession.

THE QUALITY AND QUANTITY OF AN INFANT'S FOOD.*

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Given a healthy baby, one that has successfully passed the upper and lower narrows and disembarked from the troubled waters without bruise or blemish, what treatment has this child a right to demand at our hands during the earlier months of its existence, first as to the quality, and again as to the quantity of food it shall receive at each nursing? These are the two specific problems that shall demand our exclusive attention, realizing that we are dealing with the healthy and not the sick child.

It also seems opportune that we should give our best thought to this subject at this particular time of year, when we are brought face to face with a high infant mortality, a mortality that we can only too often directly trace to errors in diet that might have been avoided.

I say, what treatment has this child a *right* to demand? If the mother is in good health, with sound nipples and a good flow of milk, the child's right is unquestionably clear and plain. The time has not yet arrived, nor do I believe it will ever come, when the refinements of the laboratory can improve upon Nature's method of rearing her young. I have no sympathy with the mother who, under such circumstances, refuses the nourishment specially designed by Nature for that special child; far better for her not to enter at all upon the obligations of married life than to shirk what is her plain duty and what ought to be her pleasure.

And yet, willing or unwilling, the presence of certain conditions would contraindicate the following out of Nature's plan. Syphilis and tuberculosis are very positive barriers in the best interests of both mother and child. Again, we meet with cases where the mother appears perfectly healthy, the quantity of milk sufficient, and yet the child does not thrive. In all such cases it is our duty to make a careful analysis of the milk, and for this purpose Holt's apparatus is the most convenient and accurate for the busy practitioner. If the sample, taken from the middle nursing, shows a specific gravity of 1·018 to 1·024 and a cream of only two or three per cent. the case is hopeless.

But with the growing demand of our enlightened civilization, breast nursing, especially among the better class of people, is becoming more and more a thing of the past. Artificial feeding has come, and has come to stay. How we can best adapt ourselves to these forced conditions is the problem that presents itself to us to-day, and our success or failure in its solution will depend upon the exactness with which we can make our artificial food correspond with Nature's product.

We will first consider the character and quality of our substitute food. Cow's milk, taken from the mixed product of the dairy and not from any one single cow, should be our main reliance. It is moderately uniform in quality, can always be obtained at a reasonable cost, and can be made to resemble mother's milk more closely than any other preparation. And yet the difficulty of obtaining a pure, fresh supply, one that is absolutely reliable, especially in the warm summer months, has been in the past and is still a serious problem.

Most excellent work, along these very lines, has been done in our own State during the past few years by Dr. Henry L. Coit, of Newark. With the co-operation of the physicians of Essex County, a model dairy has been established about six miles from Montclair. The herd is regularly inspected by a skilled veterinarian, and all animals presenting even a suspicion of disease are rejected. The character of their pasturage and food is carefully supervised. The cow's udder and the hands of the milker are subjected to a most thorough cleansing before each milking, and the milk itself passes first through a strainer into a closed pail, and thence immediately to a cold storage apartment. The services of a bacteriologist are constantly employed to determine the number and character of the bacteria present. The owner of the dairy places himself under heavy bonds to see that these regulations are faithfully and strictly carried out, and in return the physicians promise him their aid and co-operation. In this way the initial, primal supply is rendered almost absolutely pure and at a cost of only a trifle more than the regulation prices. Dr. Coit writes me that the undertaking is a most marked success in every way, and there is no reason why such a plan should not be put in successful operation in other large towns. A tour of inspection to the different dairies, such as I made last summer, and a close observation of the methods of milking and the care of the cows, will impress one with their absolute filthiness and neglect of many of the commonest laws of decency. And yet this is almost the sole food supply for a large portion of our population. We have it in our power, as physicians, to remedy this evil. Dr. Coit and the physicians of Essex County have shown us the practical working success of a model dairy, and I believe the day is not far distant when we will demand and secure similar advantages throughout the State.

But in order to make our cow's milk approach the normal standard of breast milk it needs modifying, and we need, ourselves, definite, clear ideas as to the exact chemical composition of each.

	Woman's milk.	Cow's milk.
Reaction	Alkaline.	Acid.
Coagulable albuminoids	Proportionately small.	Large.
Coagulated by acids	Not perceptible in test tube.	Very marked; not perceptible when diluted 1 to 5.
Water	87 to 88	86 to 87
Total solids	12 to 13	13 to 14
Fat	4	4
Albuminoids	1	4
Milk sugar	7	4·5
Ash	0·2	0·7
Bacteria	Not present.	Present.

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* Read before the Union, New Jersey, County Medical Society, July 10, 1895.

The foregoing table, prepared by Dr. Rotch, of Boston, gives the result of careful analysis of breast milk, taken from the middle nursing, compared with cow's milk about twenty-four hours' old.

It will be seen at a glance that the main difference lies in the albuminoids, the milk sugar, and the reaction, the fat remaining the same in each case. But reduce the albuminoids to their proper proportion and our fat and milk sugar suffer.

Dr. Meigs, of Philadelphia, was a pioneer in solving this problem, and he has furnished us with a formula which, slightly modified, is one of the best we have to-day. I say the best, because it corresponds most closely with mother's milk, and the proportions are so very simple and easy to remember:

Milk	1 part;
Cream	2 parts;
Limewater	2 "
Sugar water (ʒ j to ℥ j)	3 "

The reaction is alkaline, the albuminoids are reduced to one per cent., the fat and milk sugar both in proper ratio.

Originally under the supervision of Dr. Rotch, of Boston, there have been started in our large cities milk laboratories where the acme of refinement and accuracy has been reached in the matter of infant feeding. The milk reaches the city from a model dairy in the suburbs about six hours after milking; it is then separated into its various constituents by delicate machinery and synthetically reconstructed according to the needs of each individual baby, as indicated by the prescription blanks, which are filled out by the physician in attendance and then sent to the laboratory.

The ability to thus regulate the albuminoids in the earlier weeks of life, without diminishing at the same time either the fat or sugar, is one of the most admirable features of our prescription laboratory.

A few drops of acetic acid added to a test tube of mother's milk produce no appreciable curd; to the same amount of undiluted cow's milk, large thick white curds are immediately precipitated, and it is only when the dilution is carried as far as one to five that we escape this mass coagulation. Excessive albuminoid digestion, and the resulting inability of the stomach to cope with the tough coagulum, I believe, is the starting point of many of our gastric disorders. With newborn infants it has been my custom, and invariably with good results, to reduce the albuminoids as low as a half of one per cent., gradually working up to the standard at the end of a few weeks.

The milk laboratory is a scientific, rational method of infant feeding—a method which has already gained a firm foothold in Boston, New York, and Philadelphia, and one that has come to stay. The total amount necessary for the twenty-four hours is delivered each morning in separate bottles that have all been sterilized and neatly packed in wicker baskets.

So far, we have imitated Nature in the preparation of our food, as far as the ratio of the different ingredients is concerned. But mother's milk is absolutely sterile; cow's milk under the very best auspices contains bacteria. It is interesting to know that germs are always found in the main duct of a cow's teat for a distance of half an inch from the tip, even with the very best of care. And so the necessity of either sterilization or pasteurization is at once apparent. Personally the writer prefers the latter method, mainly because the product is more palatable to the child. In a series of experiments carried on by Dr. R. G. Freeman, of New York, it has also been found to be equally efficacious in destroying the disease-producing germs.

The doctor's pasteurizer, specially designed by him for this purpose, makes the details of the process very simple and within the mental grasp of the dullest nurse; or an ordinary Arnold steam sterilizer, with a perforated lid, answers the same purpose.

We have said nothing so far of the different artificial foods, whose number, like the different cures for whooping-cough, is legion. I am opposed to their use in a healthy child, because they introduce into the infant's stomach elements which Nature never intended to be put there. Again, analyses made from time to time often show a marked variation in their composition. Commercial enterprise, and not the good of the infant, is the governing motive of the manufacturers. As a result the public suffers.

Of the different preparations I am inclined to give condensed milk a leading place. It is practically sterile and moderately uniform in its composition. It is cheap, easy to prepare, and among the poor and destitute, where cleanliness is often an unknown quality, but boiled water always a possibility, it offers many advantages. Its low percentage of albuminoids, when diluted one to twelve, gives us a food easy to digest, neutral in reaction, but lacking in potential energy by virtue of its small amount of fat. The baby apparently thrives, often grows fat, and yet I think it is a common experience with all of us that such infants lack the staying qualities which their size and appearance would give us a right to expect. The production of animal heat is very necessary to the active metabolism of the growing child, and unless we add a certain amount of cream our mixture is far from perfect. A scant teaspoonful to the ounce corrects this deficiency, and gives us about four per cent. of fat—the percentage in normal breast milk.

The use of peptonized foods, which at one time seemed destined to crowd out all other forms of feeding, is fortunately being rapidly relegated to its proper position. Its value in certain forms of gastric disturbance may be unquestionable; but Nature never intended to have this normal function usurped in the healthy child, and I believe the foundation for a weak digestion and much subsequent dyspepsia has in many instances been laid by the use of peptonized foods. Idleness means atrophy and degeneration in a gastric follicle as well as in a striped muscular fibre.

Imperial granum, Nestlé's food, and Carnrick's food, all contain unconverted starch; and why an infant only a few days old should be called upon to digest an element for which it is totally unprepared is a mystery to the writer. We know that the starch-converting functions of the salivary and pancreatic glands only begin to be developed at about the third month. Mother's milk never contains this element, which in itself should be our warrant for withholding it absolutely.

Mellin's food, unless diluted with milk, gives us a food very low in the albuminoids and fat. Even then, with its fifty per cent. of starch converted into glucose, we are doing for Nature what she intended to do for herself. Why not add the milk sugar originally, and allow Nature, in her own good way and time, to complete the process?

And so we might go on through the long and ever-increasing list of patent foods, finding in them all either a serious omission or a meddlesome addition. They are made possible only by the tolerance and active assistance of the medical profession, and it seems to the writer that it is high time we awoke to a sense of ourr esponsibility in the matter. The more closely we can copy Nature in our efforts to raise the bottle baby, the more successful will we be. With cow's milk, properly modified and properly prepared, I believe we have a mixture which more closely approaches the standard than any of the artificial preparations.

We now come to the consideration of the proper amount for each feeding. Our mixture may be ideal in every respect, and yet a child's health is made or marred as often by the quantity as by the quality of its food. While resident physician at the New York Foundling Hospital I became very much interested in this subject. I shall never forget one wizened, pinched little creature, only six weeks old, brought to us with the diagnosis of a "touch of marasmus," and indeed it was a "touch," for the grim monster already had the life of the little one firmly in its grasp. "The child was a trifle fretful and nervous," the nurse went on to explain, "and we found it was quiet only with a bottle in its mouth." And so they had been in the habit of feeding this infant a mixture of six ounces every hour to an hour and a half. The bottle was no sooner emptied than it vomited the entire amount. With its hunger still unsatisfied, it cried for more, only to have the same process repeated until death came to relieve it of its misery. How often we see a repetition of this same scene! Hundreds of babies die every year from *overfeeding* where only one succumbs from being fed too little. I only wish I might have preserved this stomach as we saw it the next day at the autopsy. Dilated to three or four times its normal size by this continual stretching process, with the muscular tone so destroyed that peristalsis was no longer possible, the walls so thin that they looked like tissue paper, no wonder that all the normal functions were held in abeyance. We all know that if we subject elastic tissue to prolonged and excessive stretching, it soon loses its resiliency and refuses to return to its normal condition. And yet we seem callous to the fact that this principle holds just as true when we subject the stomach to an unnatural strain. I believe that many of our cases of dilated stomachs in after life, and atonic dyspepsias, can be traced directly to this overdistention in infancy.

Being interested to know just how much the stomach in its normal condition ought to hold, we selected children for autopsies who had died of some trouble other than gastro-intestinal. The results were most interesting, and I have brought with me this afternoon some of these stomachs, one of which has been kindly prepared by Dr. David Bovaird, and in separate bottles the amount each held by actual measurement. These measurements were made at the time of the autopsy, and before the stomach had been subjected to the action of any hardening or preservative agents. With the pylorus closed the water was allowed to pass in through the cardiac opening from a funnel held about two feet above, insuring the natural amount of pressure. We found the size of the stomach bore a direct ratio to the size and weight of the child. Snitkin, from a long series of carefully conducted experiments, concludes that the average capacity is about one one-hundredth of the child's weight. Thus a child having an initial weight of seven pounds would have a gastric capacity of a little over an ounce, while its brother, who may have weighed twelve pounds, would have nearly double. He also found that the capacity increased at the rate of about fifteen grains a day. We found the average capacity for an average child under one month between one and two ounces; at the third month, between three and four ounces, or, in other words, a gain of about an ounce a month until the sixth month. If I ordered my grain dealer to put fifty bushels of oats in a bin that only holds ten, he would rightly deem me a fit subject for hospital treatment, and yet we constantly see nurses and mothers forcing a five- or a six-ounce mixture into the stomach of a child only a month old. The one is as rational as the other.

Another series of experiments that we carried on were of interest in determining the amount of milk a healthy child gets from the breast at each nursing. With delicately adjusted scales we weighed a series of babies at different ages, before and after nursing, and found the results corresponded very closely with the normal size of the stomach at these different periods. And just in this connection I would like to mention the advantage of weighing the babies regularly every week on an accurate pair of scales. A gain of a half to three quarters of an ounce a day indicates that we are making satisfactory progress. Below this average something is wrong, and often it is the first index, the first straw that shows us the fact that the child is losing ground.

In conclusion, then, I would like to emphasize my belief that we are absolutely powerless to improve upon Nature's method of caring for her young. At the New York Foundling Hospital during the last twenty years the attempt has been faithfully made time and again to find a satisfactory substitute for mother's milk, only to end each time in a dismal failure. The healthful condition of the two thousand little waifs under their control is proof positive of the value of breast nursing, the only system employed there to-day.

But with the impossibility of obtaining mother's milk, we would advise the use of cow's milk, so diluted with cream, limewater, and sugar water as to form a ratio of one, two, two, and three, using this sterilized or pasteurized mixture in preference to all forms of so-called patent foods, because it resembles most closely Nature's own product.

Again and finally let us remember the normal size and capacity of the infant's stomach.

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THE MINERAL SPRINGS OF AMERICA.

It is well understood among American physicians that not a tithe of the benefits which the mineral springs of the country are capable of yielding is taken advantage of. Here and there are to be found spas of some celebrity which attract great numbers of people in the season, not so much on account of their being esteemed for their medicinal virtues as because they are in attractive situations, but practically it may still be said that American springs are ignored. Occasionally something happens to bring the medicinal properties of particular springs into general recognition in the profession, as was the case with the Hot Springs of Arkansas when the Mississippi Valley Medical Association held its annual meeting among them last year, and now and then an article is published that leads to the same result. An important article of this sort is Dr. Morris's, on The Therapeutic Action of Hot Sulpho-saline Waters, which we publish in this issue of the *Journal*. It will be seen that in that article, read before the Hospital Graduates' Club, Dr. Morris deals with the Glenwood Springs in Colorado, the waters of which, he says, so closely resemble those of Aix-la-Chapelle that from a therapeutical point of view it may be assumed that under whatever circumstances the Aix-la-Chapelle waters are indicated those of Glenwood will be found appropriate.

The Glenwood waters seem to act powerfully as an eliminant, stimulating catharsis, increasing the flow of bile, augmenting the action of the kidneys, and giving rise to a diaphoresis that is remarkable for its long continuance after the bath. Having these properties, it is not strange that they should have been found particularly efficacious in such diseases as rheumatism, gout, syphilis, chronic skin diseases, and obstinate digestive disorders. The action of the vapor caves on the nervous system seems to be worthy of special inquiry; apparently it is that of stimulating and toning up the jaded system, and yet at the same time that of soothing it when over-wrought to the point of irritation. As the physicians of Arkansas have observed with regard to their own Hot Springs, the Glenwood waters appear to facilitate the cure of syphilis largely by enabling the patients to tolerate doses of mercury and the iodides that they would not ordinarily be able to bear. A noticeable feature of the Glenwood waters is that, according to Dr. Morris, they work their beneficial effects without the necessity of subjecting the patient to any special regimen or any restriction in the matter of diet. It is to be hoped that further reports of experience with these waters will soon be laid before the profession, and that other American springs will be brought adequately to the attention of American physicians.

MINOR PARAGRAPHS.

STATE CONTROL OF MEDICAL PRACTICE.

Last week we spoke of the need of care and moderation on the part of State examining boards, lest the recognized difficulty of obtaining suitable legislation should be increased. We think the experience of almost any State board will show that such caution is necessary. During the week we have received from an esteemed member of the North Carolina State Board of Health a letter in which he says: "You are right in what you say in regard to the difficulties in obtaining legislation to control the practice of medicine by law and the necessity of being circumspect in order to retain what has been obtained. After thirty-five years we have at last public opinion with us, but we do not relax our vigilance."

THE INVESTIGATION OF DISEASE IN THE EAST.

Under the head of Naval Intelligence it will be seen that Passed Assistant Surgeon W. F. Arnold, of the navy, has been ordered to special duty in investigating the plague in China and cholera in Japan. Such an investigation will be largely if not wholly of a reminiscent character, but we may expect it to prove hardly the less valuable on that account.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 24, 1895:

DISEASES.	Week ending Sept. 17.		Week ending Sept. 24.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	45	5	33	6
Scarlet fever	24	1	19	1
Cerebro-spinal meningitis	3	2	4	5
Measles	49	3	35	5
Diphtheria	113	14	109	16
Small-pox	0	0	0	0
Tuberculosis	130	112	54	132

An Army Medical Board will be in session in Washington, D. C., during October, 1895, for the examination of candidates for appointment to the medical corps of the United States army, to fill existing vacancies. Persons desiring to present themselves for examination by the board will make application to the Secretary of War before October 8th for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to the candidate's citizenship, character, and habits. The candidate must be between twenty-two and twenty-nine years of age and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the board. Further information regarding the examinations may be obtained by addressing the Surgeon General, U. S. Army, Washington, D. C.

The medical corps of the army consists of a surgeon general with the rank of brigadier general, six assistant surgeons general with the rank of colonel, ten deputy surgeons general with the rank of lieutenant colonel, fifty surgeons with the rank of major, and one hundred and ten assistant surgeons with the rank of first lieutenant, mounted, for the first five years, and the rank of captain, mounted, thereafter until promoted to be major. Promotion through the intermediate grades of rank from that of captain to that of colonel is by seniority, but there is an examination for the rank of captain and another for that of major, to ascertain the fitness of the officer for promotion. Advancement to the grades of lieutenant colonel and colonel takes place without further examination. The surgeon general is selected by the President from among the members of the corps. All vacancies are filled by appointment to the junior grade. To each rank is attached a fixed annual salary, which is received in monthly payments, and this is increased by ten per cent. for each period of five years' service until a maximum of forty per cent. is reached. An assistant surgeon with the rank of first lieutenant, mounted, receives $1,600 per annum, or $133.33 monthly. At the end of five years he is promoted to be captain and receives $2,000 a year, which, with the increase of ten per cent. for five years' service, is $2,200, or $183.33 a month. After ten years' service he receives $2,400, after fifteen years $2,600, and if he remains a captain after twenty years, $2,800 a year. The pay attached to the rank of major is $2,500 a year, which, with ten per cent. added for each five years' service, becomes $3,250 after fifteen years and $3,500 after twenty years. The monthly pay of lieutenant colonel, colonel, and brigadier general is $333.33, $375, and $458.33 respectively. Officers, in addition to their pay proper, are furnished with a liberal allowance of quarters according to rank, either in kind or, where no suitable government building is available, by commutation. When traveling on duty an officer receives four cents a mile and reimbursement of money actually expended for railroad or other fares. On change of station he is entitled to transportation for professional books and papers and a reasonable amount of baggage at government expense. Mounted officers, including all officers of the medical corps, are provided with forage, stabling, and transportation for horses owned and actually kept by them, not exceeding two for all ranks below a brigadier. Groceries and other articles may be purchased from the commissary and fuel from the quartermaster's department at about wholesale cost price. Books and instruments are supplied in abundance for the use of medical officers in the performance of their duties.

A medical officer after completing a course of instruction at the Army Medical School will be assigned for some months as junior at a large military post before he is thrown upon his own responsibility. His stations after that are likely to alternate between the frontier and more desirable points, a tour of duty being usually four years at one place. Leave of absence on full pay is allowed at the rate of one month a year, and this when not taken may accumulate to a maximum of four months, which at the end of four years is then available as one continuous leave. Beyond this an officer may still be absent with permission on half pay. Absence from duty on account of sickness involves no loss of pay. Medical officers are entitled to the privilege of retirement at any time for disability incurred in the line of duty, or after forty years' service. On attaining the age of sixty-four they are placed upon the retired list by virtue of law. Retired officers receive three fourths the amount of their pay proper at the time of retirement.

It is the intention of the surgeon general to recommend the assignment for duty, as attending surgeons in the principal medical centres of the United States, of medical officers who have not yet passed their examinations for promotion to a majority, and, so far as may be practicable, in the order of their seniority. These details will be made for one year only, in order that as many medical officers as possible may be enabled to avail themselves of the opportunities thus offered to become familiar with the practice of the leading physicians and surgeons in this country, and of attending medical lectures, meetings of medical societies, etc. At the end of this tour of duty medical officers will be required to make a detailed report to the surgeon general showing how much of their time has been occupied by their official duties and to what extent they have availed themselves of the advantages offered for professional advancement.

Appointments to the medical corps of the army are made by the President after the applicant has passed a successful examination before the army medical examining board and has been recommended by the surgeon general. The scope of the examination will include the morals, habits, physical and mental qualifications of the candidate, and his general aptitude for service; and the board will report unfavorably should it have a reasonable doubt of his efficiency in any of these particulars. The physical examination comes first in order, and must be thorough. Each candidate will in addition be required to certify "that he labors under no mental or physical infirmity or disability which can interfere with the efficient discharge of any duty which may be required." Errors of refraction, when not excessive, and not accompanied by ocular disease, and when correctible by appropriate glasses, are not causes for rejection.

The mental examinations are conducted by both written and oral questions, upon—

I. Elementary branches of common school education, including arithmetic, the history and geography of the United States, physics, general literature, and ancient and modern history. Candidates professing special knowledge of the higher mathematics, ancient or modern languages, drawing, analytical chemistry, or branches of natural science, will be examined in those subjects as accomplishments and will receive due credit therefor according to their proficiency.

II. Professional branches, including anatomy, physiology, chemistry, physics, hygiene, pathology and bacteriology, therapeutics and materia medica, surgery, practice of medicine, obstetrics, and the diseases of women and children.

Examinations at the bedside will also be conducted in clinical medicine and surgery, and operations and demonstrations upon the cadaver.

The board has discretion to deviate from this general plan of examination in such manner as it deems best when necessary for the interests of the service.

To save unnecessary expense to candidates, those who desire it may have a preliminary physical examination and a mental examination in the "elementary branches of a common school education," by a medical officer of the army stationed most conveniently for this purpose, who will act under instructions from the medical examining board.

The merits of the candidates in each of the several branches, and also their relative merit as evinced by the results obtained from the entire examination, will be reported by the board, and in accordance with this report approved candidates will be appointed to existing vacancies or to such as may occur within two years thereafter. An applicant failing in one examination may be allowed a second after one year, but not a third. No concession will be made for the expenses of persons undergoing examination, but those who receive appointments will be entitled to travel allowances in obeying the first order assigning them to duty.

Medical Director Gihon, of the Navy.—On the occasion of Dr. Gihon's retirement under the age-limit law, the *Boston Herald* gives a sketch of that officer's life and public services and closes with the following:

"Dr. Gihon has represented the medical department of the navy in the American Medical Association as delegate and permanent member since 1876, and has held various committee chairmanships. He has been a member of the American Public Health Association since 1876, being elected its second vice-president in 1881, first vice-president in 1882, and president in 1883. He has been a fellow of the American Academy of Medicine since 1883, being president in 1884. He was president of the Section in Climatology and Demography of the Ninth International Medical Congress, convened at Washington, September 5, 1887. He is a member of many medical societies, and a foreign associate member of the French Society of Hygiene. He is the author of *A Look at Lisbon; A Night in a Typhoon; Practical Suggestions in Naval Hygiene; A Summer Cruise among the Atlantic Islands; Sanitary Reform in Ship Life; Sanitary Commonplaces applied to the Many; Statistics of Adolescent Growth; Transportation of Sick and Wounded; Health, the True Nobility; Medical Education, the Fundamental Fact in Medical Ethics; The Higher Plane in Medicine; Vital Statistics as Sanitary Monitors; Thirty Years of Sanitary Progress in the Navy; The Sanitary Responsibilities of the Citizen; The Trade Aspect of Medicine; The Dignity and Importance of the Individual; Sanitary Ignorance among High and Low; What is Medicine? Economic Sanitation; The Domain of Climatology and Demography; The Therapy of Ocean Climate; The Place of Naval and Military Medicine in the Profession*, and other important works. Medical Director Gihon leaves the navy under the age-retiring law, and his withdrawal will be generally regretted.

The Rush Monument Fund.—Dr. George H. Rohé, of Baltimore, the secretary and treasurer of the American Medical Association's Rush Monument Committee, announces that the sum total of the Rush Monument fund to date amounts to $3,357.39. Among the recent contributors are the following:

Dr. Nicholas Senn, of Chicago	$100 00
Dr. George M. Gould, Philadelphia	5 00
Dr. Franklin B. Ferguson, Deer Island, Me.	2 00
Dr. Andrew Annan, Emmetsburg, Md	50 00
Dr. Jacob L. Williams, Boston	1 00
Medical Society of the County of Wayne, N. Y. (through Dr. D. S. Colvin)	10 00
Dr. J. R. Buist, Nashville, Tenn	5 00
Dr. John B. Hamilton, Chicago	1 00
Dr. George N. Acker, Washington, D. C.	1 00
Surgeon-General George M. Sternberg, of the army	10 00
Eastern Ohio Medical Association (through Dr. J. C. M. Floyd)	10 00
Dr. W. H. Marsh, Solomons, Md	1 00

Further subscriptions will be acknowledged in these columns.

The Index Medicus.—Dr. Billings has received the following additional names of subscribers (twenty-seven) since his last acknowledgment was published. Up to the 24th of September he had received 105 names in all.

Albany, N. Y.—Dr. Henry Hun.

Alhambra, Cal.—Dr. Milbank Johnson.

Ann Arbor, Mich.—Medical Department of the University of Michigan.

Baltimore.—Dr. Thomas S. Cullen.

Boston.—Dr. J. W. Elliot, Dr. R. H. Fitz, Dr. M. H. Richardson.

Cleveland.—Dr. William H. Humiston.

Colorado Springs.—El Paso County Medical Society.

London.—British Medical Association.

Louisville.—Index Medicus Club.

Nashville, Tenn.—Dr. J. H. Mills.

New York.—Dr. Robert Abbe, Dr. S. T. Armstrong, Dr. L. Duncan Bulkley, Dr. D. Bryson Delavan, Dr. Alexander Lambert, Dr. Robert F. Morris, Dr. Frederick Peterson, Dr. R. W. Taylor, Dr. W. Gilman Thompson, Dr. T. H. Wiggin.

Philadelphia.—Dr. John W. Crowskey, Dr. Howard F. Hansell, Dr. John H. Packard.

Syracuse.—Dr. Henry L. Elsner, Syracuse Academy of Medicine.

The Governors of the New York Hospital have authorized two subscriptions for the library of that institution. We have to acknowledge the subscription of Dr. R. J. Hall, of Santa Barbara, Cal., whose check, drawn to the order of the editor of this journal, has been transmitted, properly indorsed, to Mr. George S. Davis, of Detroit.

The following appeared in the *Medical News* for September 21st:

"The Philadelphia County Medical Society has subscribed fifty dollars for two copies of the *Index Medicus;* and the Philadelphia Pathological Society twenty-five dollars for one copy. We are informed that the subscription credited in the *News* of August to the Quincy Public Library is in reality that of the Adams County Medical Society, of Quincy, Ill., its copy being placed in the public library for safekeeping and for the convenience of the local profession."

Dr. George Thomas Jackson informs us that he has obtained the following additional subscriptions in addition to that of Dr. A. Lambert, whose name appears in Dr. Billings's last list: Dr. R. H. Sayre, Dr. Samuel Alexander, Dr. Mary Putnam Jacobi, and the Library of the German Hospital and Dispensary (two copies).

St. Vincent's Hospital.—At a special meeting of the medical board of St. Vincent's Hospital, held in consequence of the recent death of the sister superior and director of the hospital, the following resolutions were adopted:

Resolved, That the medical board of St. Vincent's Hospital express to the Reverend Mother Superior and to the whole Sisterhood of Charity their profound sorrow at the death of Sister Superior Mary Lamentia, who for the last thirty years has administered the affairs of the hospital with such fidelity, efficiency, and success as to render it one of the foremost of the beneficent institutions of the city of New York.

Resolved, That a copy of these resolutions be sent to the Reverend Mother Superior of the Order of the Sisters of Charity at the Convent of Mount St. Vincent.

The American Orthopædic Association.—At the recent annual meeting officers for the ensuing year were elected as follows: President, Dr. Royal Whitman, of New York; vice-presidents, Dr. George W. Ryan, of Cincinnati, and Dr. J. E. Goldthwait, of Boston; secretary, Dr. John Ridlon, of Chicago; treasurer, Dr. E. G. Brackett, of Boston.

The Albany Medical College.—The *Troy Daily Times* announces that Dr. Herman Gordinier, of Troy, lecturer on physiology, has been made professor of that branch; that Dr. Clinton B. Herrick, of Troy, has been made lecturer on clinical surgery; that the following instructors have been added to the teaching corps: Dr. Thomas A. Ryan (surgery), Dr. W. G. Lewi (neurology), Dr. W. S. Hale (anatomy), and Dr. J. R.

Sweet (obstetrics); and that the following gentlemen have been made clinical assistants: Dr. C. C. McCullough, Dr. M. McHarg, Dr. J. M. Moore, Dr. A. Sautter, Dr. J. W. Wiltse, and Dr. M. D. Stephenson.

Changes of Address.—Dr. Henry A. Griffin (after October 1st), to No. 37 West Fifty-second Street, New York; Dr. C. P. Kreizer, to No. 319 West Thirtieth Street, New York; Dr. Howard Lilienthal, to No. 679 Madison Avenue, New York; Dr. Arthur M. McLaurie, to No. 205 East Fourteenth Street, New York.

The Brooklyn Navy Yard.—Dr. Walter H. Kent, formerly chemist of the Brooklyn Health Department, has been appointed chemist at the navy yard.

The Health of M. Pasteur.—General regret will be felt in the medical profession all over the world at the announcement, made in one of the Paris newspapers, that M. Pasteur is suffering from a paralytic attack.

The Death of Dr. Bardeleben, of Berlin, is announced as having taken place on Tuesday, the 24th inst.

Society Meetings for the Coming Week:

Tuesday, *October 1st:* College of Physicians, Philadelphia (Section in Otology); American Public Health Association (first day—Denver); Tri-State Medical Society of Iowa, Illinois, and Missouri (first day—Des Moines, Ia.); Utah State Medical Society (first day—Salt Lake City); New York Medico-surgical Society; Medical Association of the District of Columbia (semi-annual—Washington); Buffalo Medical and Surgical Association; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Broome (annual), Columbia (semi-annual—Chatham), Orange (semi-annual—Goshen), and Washington (semi-annual), N. Y.; Hudson (Jersey City) and Union (quarterly), N. J., County Medical Societies; Androscoggin, Me., County Medical Association; Chittenden, Vt., County Medical Society; Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore); Elmira, N. Y., Academy of Medicine.

Wednesday, *October 2d:* American Public Health Association (second day); Tri-State Medical Society of Iowa, Illinois, and Missouri (second day); Utah State Medical Society (second day); New York Academy of Medicine (Section in Public Health); Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Bridgeport, Conn., Medical Association.

Thursday, *October 3d:* American Public Health Association (third day); Tri-State Medical Society of Iowa, Illinois, and Missouri (third day); New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y. Brooklyn Surgical Society; Obstetrical Society of Philadelphia; Cuyahoga, O., County Medical Society; Washington, Vt., County Medical Society.

Friday, *October 4th:* American Public Health Association (fourth day); Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *October 5th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society; Miller's River, Mass., Medical Society.

Answers to Correspondents:

No. 439.—We learn that it will be published on or about October 1st.

Births, Marriages, and Deaths.

Married.

Carlisle—Dominick.—In New York, on Thursday, September 19th, Dr. Robert James Carlisle and Miss Mary Alice Dominick.

Mulford—Montgomery.—In Buffalo, on Saturday, September 21st, Dr. Henry Jones Mulford and Miss Maude Evelyn Montgomery.

Smith—Austin.—In Buffalo, on Tuesday, September 17th, Dr. Edward T. Smith and Miss Helen Adele Austin.

Died.

Burnette.—In New York, on Sunday, September 22d, Dr. Edward Worthington Burnette.

Campbell.—In New York, on Sunday, September 22d, Dr. John Lord Campbell, aged seventy-two years.

Harnan.—In New Orleans, La., on Saturday, September 21st, Mary Frances Harnan, sister of Dr. Will B. Harnan.

Hastings.—In Warren, Mass., on Monday, September 23d, Dr. Joseph Wilcox Hastings.

Stannard.—In Chicago, on Sunday, September 1st, Dr. Frank Drake Stannard.

Van Ness.—In Brooklyn, on Tuesday, September 17th, Dr. John Van Ness.

Young.—In Brooklyn, on Monday, September 23d, Dr. John S. Young, aged sixty-two years.

Proceedings of Societies.

AMERICAN ORTHOPÆDIC ASSOCIATION.

Ninth Annual Meeting, held in Chicago on Tuesday, Wednesday and Thursday, September 17, 18, and 19, 1895.

The President, Dr. John Ridlon, of Chicago, in the Chair.

The Growth and Prosperity of the Association was the subject of the president's address.

He said that what had been most operative in bringing about the present healthful condition were the wisely framed constitution and by-laws and a strict adherence to their requirements. To become a member the candidate must be personally known by at least two members, who voluntarily nominated him for membership, and he must have a creditable record of orthopædic work, either as a writer, as a teacher, or as a clinician.

The generous expenditure of practically the entire income of the association in the annual publication of its volume of *Transactions* had played no unimportant part in its development. In this regard he urged upon the members the serious consideration of the publication of a monthly or, at least, bimonthly journal, which should contain all the papers read and the discussions held before the association and abstracts of other worthy publications upon orthopædic subjects, whether first appearing here or abroad. Such a journal could be issued at little, if any, increase upon the cost of the present *Transactions*, and in the hands of an enterprising editor could, within a year or two, be made almost self-supporting.

Flat-foot.—Dr. R. W. Lovett and Dr. John Dane, of Boston, contributed a joint paper in which they submitted the following conclusions: 1. That the feet of the infant at birth are not flat; that the tracing at that time resembles the adult normal foot. 2. That a body of fat develops under the arch which gives the appearance of flat-foot for some years, and that at the age of four or five years this is absorbed. 3. That the smoke tracing is not a perfect method of studying abnormities of the arch of the foot, because it fails to detect the slighter cases or to record pronation. 4. That the element of pronation is more constant than breaking down of the arch of the foot, and may be entirely separated from it. 5. That the condition of pronated foot without breaking down of the arch of the foot should be recognized and not confounded with flat-foot. 6. That the treatment of pronated and flat-foot is the same, and consists in the use of proper boots, the application of a pad or plate, the stretching of the gastrocnemius muscle where it is shortened, and the routine use of massage, if obtainable, and always of exercises to develop the muscles which hold up the arch.

Congenital Absence of the Radii.—Dr. S. L. McCurdy, of Pittsburgh, read a paper on this subject. The patient, five months old, had been born at full term. The presentation had been normal. There was complete absence of the radii, with an abnormal relationship existing in the blood-vessels and soft structures of the forearm; otherwise the child was perfectly developed. Operative interference was not advised, for the reason that no successful method had been invented. In the worst cases, where there was much bony deficiency, the choice lay between amputation and doing nothing. Professor Bardenheuer, two years ago, had presented a new method for the operative treatment of these deformities. His operation on the forearm consisted in replacing the defect at its lower part with bone, and thereby permanently correcting the deformed position of the hand.

The operation was performed by a longitudinal incision, the distal end of the ulna and the carpus were exposed, and the first was isolated from its attachments. The ulna was then split through its middle into a radial and an ulnar section. These were separated by allowing the carpal bones to come up between them. By means of a nail through each side the ends were fixed to the carpus. A plaster bandage was applied and left on for four or five weeks. This operation was easily carried out. It had been done by Bardenheuer three times, and the results in all three cases had been good, both from a functional and from a cosmetic point of view. In all cases the deformity had been permanently corrected. The same principles might be adopted in the treatment of other defects. In cases of congenital defects of the tibia or fibula the same operation had been done, once in each. The best result had been obtained in the fibular defect.

On March 1, 1895, operation had been done in the author's case, the desire being to adhere to the method described as nearly as possible. It had not been possible, however, to follow the method. The soft structures, tendons, etc., were so much shortened that to attempt to shift the end of the ulna across to the centre of the carpus would have been impossible except by a virtual amputation of the arm. To split the ulna and wire the carpal bones between these ends would have been impossible. The only method was to sever the ulna at a point where the free end of the upper fragment could be brought to the semilunar bone. The semilunar was curetted and drilled, and after drilling the ulna these bones were adjusted with silkworm gut. It was necessary to cut the tendons upon the radial side of the forearm before the hand could be straightened. A number of arteries were severed and required ligation. The cut through the soft tissues was made obliquely across the forearm, beginning upon the dorsum of the wrist and running upward and around under the forearm, the object being to allow the structures to slide upon each other, and then sutured in the corrected position, thus avoiding the gap that would otherwise be left after a cross section. After dressings were applied the hand was put up in plaster of Paris. Primary healing took place. The operation was done on the left hand, and a second operation was planned for the right arm, but the patient died with pulmonary tuberculosis five months afterward.

The author reported a case of congenital deformity with a decided history of maternal impression. Mrs. S., whose husband was a railroad conductor, was startled, when about six weeks pregnant, by the appearance of a crowd of men with a man on a stretcher, for she thought it was her husband. She had a habit (when startled or in grief) of grasping the fingers of the left hand, including the thumb, just below the knuckles, with the right hand. While the injured man was not her husband, the impression was imparted to her unborn child.

Congenital Dislocation of the Shoulder Joint.—Dr. A. M. Phelps, of New York, reported a case and described an operation for its relief.

Removal of the Astragalus for Talipes Valgus.—Dr. James E. Moore, of Minneapolis, read a paper on this subject, in which he said that the modern non-operative treatment of talipes valgus was so satisfactory that it was rarely necessary to consider operative measures. In acquired flat-foot, several operations had been tried in extreme cases, and among them Ogston's operation, which had probably been performed more frequently than any other, but at present it did not seem to have any very enthusiastic advocates. The scaphoid bone had been removed, but this had not been followed by flattering results. The writer had studied this subject carefully about two years before, when the following case had fallen into his hands: The patient was a woman, twenty years of age, who had cut the internal lateral ligament of the ankle when she was a child by stepping on a piece of glass. An examination showed that the uninjured foot manifested a natural tendency toward flat-foot, and the injured foot showed extreme flat-foot, with the inner side of the great toe turned almost directly downward. She had gradually grown worse for some years, so that when she came to him she had been obliged to give up her employment as a domestic on account of the severe pain produced by standing or walking.

On June 26, 1894, chloroform was administered with the hope of forcibly correcting the deformity, but owing to the extreme rigidity of the foot failure was feared, so the patient's consent was gained to resort to a cutting operation if it was found necessary. It was found impossible to overcome the deformity by manual force, and an operation was decided upon. The displaced astragalus formed the bulk of the deformity and was the keynote to the trouble. This the author decided to remove, and he did it through a longitudinal incision on the inner side of the foot. The foot could immediately be placed in a very satisfactory position. The usual surgical dressing was applied and the foot held in proper position by a plaster-of-Paris bandage. The healing was prompt and satisfactory, and in about two months the patient began to walk. There was a marked improvement in the position of the foot. A photograph was shown, which had been taken about a year after the patient had begun to walk, showing that the ankle, which had been atrophied, had developed considerably. The result of the operation was more satisfactory from a practical than from an æsthetic point of view. The patient still complained of some pain. When she stood much or walked more than usual the foot was somewhat swollen in the evening, but she was now at work. While she was in every way better than before the operation, the result was not perfect, but the writer hoped that eventually she would be quite well.

Tendon Transplantation in the Treatment of Deformities resulting from Infantile Paralysis.—Dr. Joel E. Goldthwaite, of Boston, read a paper thus entitled. The purpose of the paper was to call attention to the possibility of furnishing better mechanical attachments for certain non-paralyzed or only partially paralyzed muscles as a part of the treatment of infantile paralysis. A certain number of cases were reported in which the results had been most gratifying, and from which it appeared not unreasonable to class tendon transplantation with tenotomy and the other surgical procedures that had a place in the treatment of this condition. At the knee undoubtedly tendon transplantation could be employed to advantage in a certain limited number of cases, and possibly at some of the other articulations, although the best results were to be looked for in those portions of the body where the tendons were well formed and lay superficially. The operation was not to be attempted upon the tendons of muscles which were wholly paralyzed, except possibly in rare instances for the purpose of furnishing an additional support of a purely tendinous character. It was conceivable that in the foot, for instance, if the tendons on the inner side were more atrophied and offered less resistance than those on the outer side, these tendons might be attached to the inner side and thus increase the lateral support. This was merely a suggestion, however, for it had not been tried practically, and the benefit to be derived from it would undoubtedly be slight. There was also a question as to whether or not two atrophied tendons would unite firmly, although from watching the other cases the author doubted if there would be any trouble on this account.

The best results from tendon transplantation were to be obtained in cases in which one group of muscles had been destroyed, leaving the antagonizing or accessory muscles very little if at all impaired. This resulted in a definite deformity which became more marked as the age increased. The best illustration of this was to be found in the condition so commonly seen in the foot where the gastrocnemius and the muscles at the inner side of the foot had been destroyed, the peroneal muscles retaining their normal contractility. The result was a valgus which constantly increased, both from the muscular contraction and from the faulty mechanical position in which the weight of the body must be received upon the foot in walking or in standing. This was also seen in connection with the anterior muscles of the foot, the anterior tibial and the extensor pollicis so often being destroyed, left the peroneus tertius and the extensor communis digitorum the only muscles to be used in flexing the foot at the ankle. This also resulted in a valgus which steadily increased.

To correct these mechanical conditions and to use the non-paralyzed muscles to the best advantage, the author had operated in four cases and the tendons of the muscles had been given new attachments.

A Study of the Weak Foot, with Reference to its Causes, its Diagnosis, and its Cure; with an Analysis of One Thousand Cases of So-called Flat-foot.—Dr. Royal Whitman, of New York, read a paper thus entitled. (To be published.)

Metatarsalgia was the subject of a paper by Dr. L. A. Weigel, of Rochester.

On the Deformities and Malformations resulting from Acute Infections in Bone.—Dr. Roswell Park, of Buffalo, read a paper in which he said that, clinically, there were three situations in which bone infections were most commonly met with—beneath the periosteum, in the epiphyses, and in the diaphyses. From the pathological side, infections were of four main varieties: 1. The tubercular. 2. The staphylococcous. 3. The streptococcous. 4. The pneumococcous. To these might be added rare instances in which other organisms were primarily or secondarily present. Of these, certainly the more common was the tubercular form, whose manifestations were usually not acute. The three others might be grouped in a general way as pyogenic forms of invasion in which pus was practically invariably produced, provided only that sufficient time had elapsed. The author alluded to the acute miliary tuberculosis of bone, which corresponded in most essentials with similar invasions of the lungs, and of which he had seen occasional examples. It was not quite so rapid as the pyogenic forms, and it might take two or three weeks to produce such destruction of the bone as to require operation. It stood, therefore, in an intermediate position between the acute infections and the slower (usually the tubercular) lesions. Nevertheless, it was sufficiently acute to demand prompt recognition, and when recognized might often be relieved by prompt operative interference. The course of a bone disease would depend first upon the location of the lesion, and secondly upon its character.

As showing the relative frequency of parts involved, in thirty cases observed by Kocher the disease had occurred thirteen times in the tibia and eleven times in the femur. In ninety-eight cases collected by Leucke and Volkmann, the femur had been involved in thirty-six, the tibia in thirty-four, and the humerus in eleven. Disease in the immediate neighborhood of the hip joint was about five times as common as in that of the knee. Comparing epiphyses with diaphyses, and accepting Schede's sixty-seven cases, we found that, of twenty-eight cases in which the femur had been involved, half of them had been in the shaft and half in the diaphysis. In the tibia, of twenty-seven cases, only nine had concerned the epiphyses; and of seven cases of the humerus, two had involved the epiphyses.

With regard to necrosis, it concerned orthopædists mainly in this, that it produced in many instances a weakening of the bone which might lead either to fracture, to deformity, or to curvature. Spontaneous fractures of necrotic bone had occurred under the writer's observation, and he remembered one case of a necrotic femur which had broken as he was lifting the patient upon the operating table. Incidentally, there was danger of cancer in some of these cases, for Volkmann had collected thirty-two cases in which old and fistulous passages had become the site of epitheliomatous changes and in which cancer had been the final result.

Joint Disability following Fractures was the subject of a paper by Dr. James Kerr, of Washington.

The Ambulatory Treatment of Pott's Disease.—Dr. R. W. Lovett, of Boston, read a paper thus entitled. He considered this disease a very grave one, which ought to be treated largely by recumbency during the active stage, for the reason that we recognized that our apparatus was intrinsically imperfect on account of the nature of the problem. If we used apparatus, it seemed to him that the proper use would be in a small way to vary the monotomy of recumbency. Used in any way, we should remember that the position of the superincumbent weight was a most important matter, and that the chest and head should be thrown as far back as possible. Indeed, we saw Nature trying to throw the chin into this position continually. We should also remember that the higher up the body or backward pull was made the less was required, and when this limitation in the use of apparatus was accepted, its field would be more limited than it was now. The use of traction during recumbency seemed to the author an advantage, inasmuch as it added but little to the discomfort of the child and it manifestly increased the length, which it could only do by diminishing the curvature in the vertebral column.

(*To be continued.*)

Book Notices.

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D., New York City. In Twenty Volumes. Volume III. Occupation Diseases, Drug Habits, and Poisons. New York: William Wood & Co., 1895. Pp. vi–3 to 639.

The first topic in the present volume of this series is on alcoholism and drug habits, by Dr. Norman Kerr, whose work in the field of narcomania, to use his own term, is so well known. Dr. Kerr objects to the use of the term inebriety as synonymous with drunkenness or alcoholism, and would limit the former to designate an overpowering morbid impulse, craving, or craze that tends to drive certain individuals to excess in intoxicants; but narcomania means a mania for narcotism by any intoxicating or anæsthetic substance.

Acute and chronic alcoholism are described, and the author lends his authority to the abrupt discontinuance of the use of alcohol as the first condition of cure, substituting aromatic spirit of ammonia for liquor if any risk is feared. He protests against the use of any opium preparation to induce sleep in alcoholism, because in tissues saturated with alcohol deep and fatally ending coma may ensue. This latter fact is true regarding the use of chloral in such cases. While the author excludes the use of strychnine until the delirium has ceased, the reviewer has seen such unmistakable benefit follow its administration that it would seem a most desirable remedy to prevent the collapse, sometimes fatal, following delirium tremens; furthermore, while opium preparations alone are harmful, if given in small doses in conjunction with strychnine they are beneficial.

Apomorphine given hypodermically is superior to ipecac for the purpose of emptying the stomach. The author considers that liquor ammonii acetatis exerts a specially favorable influence on the rapidity and completeness of the elimination of alcohol.

Regarding the use of hypnotic suggestion to prevent the impulse to use alcohol, Dr. Kerr truly says that there follow, too often, increased mental instability and will palsy which can not be attributed to anything else than artificially produced hypnosis.

There is a decided diversity of opinion between Dr. Kerr and the Indian Opium Commission regarding the use of opium. The latter body did not find that the sale of opium in India affected the native population undesirably; in fact, the report conveyed the idea that the Indian government benefited its people by its protection of opium traffic. Yet Dr. Kerr informs us that "the moral sense is by and by perverted so that the person's word can not be relied on, and the no longer pleasant though necessary opiate oblivion is procured, if it can not be honestly, by theft, the sale of one's living body, or murder." The latter was the old-fashioned idea regarding the dangers of opium and its preparations, but the Indian Commission's testimony aimed to show that it prolonged life, was a prophylactic against malaria, and in general was a beneficial preparation for man's use. Dr. Kerr makes no mention of that report.

Cannabinism, chloralism, chloroformism, etherism, and cocainism are described with sufficient completeness, and there is a section on substances in which the intoxicating capacity is doubtful, such as gelsemium, sulphonal, paraldehyde, antipyrine, and arsenic. Caffeinism, theinism, and tobaccoism are treated of in this connection.

Dr. Kerr holds that inebriety is an hereditary or acquired neurosis that may be periodical or habitual and social or solitary. In a last analysis the condition is one of mental degeneration resulting from neurotic instability. That there is an inebriate centre among the higher nerve centres, as Dr. Kerr believes, seems untenable from any existing knowledge of the higher centres.

While Dr. Kerr recognizes that there is a variety of intoxication voluntarily induced for the "purpose of anæsthetic 'nerve' to commit a crime," he believes that as a rule the criminal whose act is committed during intoxication should be relieved from responsibility for the consequences of his offense.

Dr. George F. Shrady is the author of a very judicial and interesting paper on Shock and Collapse. Every physician who operates, unfortunately they are not surgeons, should consider carefully his dictum: "The modern methods of operating, as compared with those before the days of anæsthesia and asepsis, have an undoubted tendency in inviting shock." Emphasis should be laid on the fact that prolonged anæsthesia may contribute to shock, a point overlooked by many operators.

Dr. Shrady's position on the permanent effects of railroad shock in cases where there has been no apparent injury are in accord with excellent authority, except that of some railroad surgeons, and with the experience of neurologists. This paper should be commended as one of the best that have been published on the subject of shock.

Dr. A. L. Gihon is the author of the sections on Seasickness, Heat-stroke, and Frost-bite, all of which subjects he reviews in his usual encyclopædic manner.

Dr. George von Liebig is the author of the paper on Mountain Sickness, which he considers is caused by an increased pulmonary tension, due to diminished atmospheric pressure, which induces changes in the mode of respiration and a more contracted state of the lungs. In consequence there is an overfilling of the venous system and there is an insufficient supply of oxygen. A gradual ascent of elevations will enable the lungs to accommodate themselves to the changed conditions of respiration. The author does not refer to the use of the kola nut as a remedy.

The chapter on Osteomalacia is by Dr. W. T. Councilman. He refers to several theories in regard to the ætiology of the disease, but considers that all are inadequate to explain the phenomena. Unfortunately, all research has failed to discover a method of curing it.

Dr. James Hendrie Lloyd has written an elaborate chapter on the diseases of occupation. Dr. Lloyd's position that the "prevalence of any disease among any section of artisans, as made up in comparative tables from the death returns, affords a very doubtful light upon the effect of their particular occupation upon their mortality" from the disease specified, seems to be untenable. If in a series of years the disease in question affects a class of artisans more than it does the rest of the people among whom they work, it seems impossible to attribute the increase of the disease to another factor than the occupation. Aside from their occupation, cotton spinners, cited by Dr. Lloyd, do not live differently from other people in the United States or England; and if there is an increased tendency to pulmonary troubles among such people, and the character of their work is likely to cause pneumonokoniosis, it seems justifiable to attribute the latter to the occupation. Life and accident insurance companies do not insure certain classes of railroad or mine employees, because statistics show that there is a greater incidence of mortality among such workmen; while the fact may not throw any strong light upon the subject from Dr. Lloyd's standpoint, it has proved useful in corporations in which large amounts of capital are engaged. As a whole, however, Dr. Lloyd's paper is an interesting *résumé* of the subject of occupation diseases.

Dr. Beaumont Small is the author of the section on Poisoning, in which is included a consideration of the symptoms, effects, and treatment of the several vegetable and acid poisons, and Dr. James Stewart has written the chapter on poisoning from lead, arsenic, zinc, copper, mercury, silver, and phosphorus.

This volume is a satisfactory companion to its predecessors.

Handbuch der physiologischen Optik. Von H. von Helmholtz. Zweite umgearbeitete Auflage. Achte, neunte und zehnte Lieferungen. Hamburg und Leipzig: Leopold Voss, 1894 and 1895.

The seventh fasciculus of this second edition of von Helmholtz's great work was published in the summer of 1892. Two years elapsed before the eighth fasciculus appeared, and this was rapidly followed by the ninth fasciculus in the same year. A few weeks ago appeared the tenth fasciculus, and with it the gratifying assurance that the progress of the work would not be interfered with or hindered by the death of the celebrated author, but would be carried to completion by Professor König, of Berlin, who has assisted Professor Helmholtz from the beginning in the publication of the second edition. The tenth fasciculus carries the work well into the third section of the doctrine of visual perceptions, ending with a discussion of the subject of the absolute distance. Much new matter has been added in the eighth and ninth fasciculi, and the chapter on visual perceptions in general has been entirely rewritten. The chapter on the movements of the eyes remains unchanged as it was in the first edition, with the masterly presentation of the laws of rotation which has rendered the work a classic.

The second edition has thus been carried so far toward completion that we may hope to see the publication of the entire work before the close of another year.

Lehrbuch der speciellen pathologischen Anatomie. Von Dr. Ernst Ziegler, Professor der pathologischen Anatomie und der allgemeinen Pathologie an der Universität Freiburg in Baden. Achte verbesserte und theilweise neu bearbeitete Auflage. Mit 562 theils schwarzen, theils farbigen Abbildungen. Jena: Gustav Fischer, 1895. Pp. xii–3 to 1025.

There is little to say which has not already been said concerning the merits of this work. No department of medical science has been illuminated by the German mind to a greater extent than pathological anatomy. What do we not owe to the patient investigations which it has made in this rich field? The work of Ziegler stands forth pre-eminent, not only for comprehensiveness, but for lucidity and perspicuity of style. That a German can be profound and at the same time clear is proved by this author's work, and we are convinced that the great popularity which it has enjoyed, as shown by eight editions within a very few years, is due in no small measure to this particular.

On Some Symptoms which Simulate Disease of the Pelvic Organs in Women, and their Treatment by Allo-piesto-myo-kinetics (Massage) and by Auto-piesto-myo-kinetics (Self-movements of Muscles under Pressure). By A. Rabagliati, M. A., F. R. C. S. Edin., Honorary Gynæcologist, etc., of Bradford Infirmary. New York: William Wood & Company, 1895. Pp. viii–9 to 77. [Price, $1.50.]

The author inculcates the doctrine that the ailments of women, even if something physically wrong is found with the generative organs, are often more surely cured or mitigated by attending to the general health than by treatment of the pelvic lesions. This is wholesome teaching, and on that account the reader should forgive Mr. Rabagliati for his frightful coinage of words. If anybody concludes to try the treatment on a woman, we think he had better not let her see the illustrations contained in the book, for some of them depict attitudes that would probably strike the ordinary woman as unattractive, to say the least.

BOOKS, ETC., RECEIVED.

Clinical Lectures on Diseases of the Nervous System, delivered at the National Hospital for the Paralyzed and Epileptic, London. By W. R. Gowers, M. D., F. R. S., Physician to the Hospital; Consulting Physician to University College Hospital. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. 279. [Price, $2.]

Some Physiological Factors of the Neuroses of Childhood. By B. K. Rachford, M. D., Professor of Physiology and Clinician to Children's Clinic, Medical College of Ohio. Cincinnati: The Robert Clarke Company, 1895. Pp. viii–122. [Price, $1.]

Eyesight and School Life. By Simeon Snell, F. R. C. S. Ed., Ophthalmic Surgeon to the Sheffield General Infirmary, and to the School for the Blind, etc. With Numerous Illustrations. Bristol: John Wright & Co., 1895. Pp. viii–70. [Price, 2*s.* 6*d.*]

The Climates and Baths of Great Britain. Being the Report of a Committee of the Royal Medical and Chirurgical Society of London. W. M. Ord, M. D., Chairman; A. E. Garrod, M. D., Honorable Secretary. Volume I, The Climates of the South of England, and the Chief Medicinal Springs of Great Britain. London and New York: Macmillan & Co., 1895. Pp. xvi–640. [Price, $6.50.]

A Manual of Organic Materia Medica. Being a Guide to Materia Medica of the Vegetable and Animal Kingdoms, for the Use of Students, Druggists, Pharmacists, and Physicians. By John M. Maisch, Ph. M., Phar. D., Late Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. Sixth Edition. Revised by Henry C. C. Maisch, Ph. G., Ph. D. Philadelphia: Lea Brothers & Co., 1895. Pp. viii–25 to 526.

A Manual of Obstetrics. By A. F. A. King, M. D., Professor of Obstetrics and Diseases of Women and Children in the Medical Department of the Columbian University, Washington, D. C. Sixth Edition. With Two Hundred and Twenty-one Illustrations. Philadelphia: Lea Brothers & Co., 1895. Pp. xxiv–25 to 533.

A Guide to Systematic Readings in the Encyclopædia Britannica. By James Baldwin, Ph. D. Chicago and New York: The Werner Company, 1895. Pp. 9–11 to 316.

Transactions of the Semi-centennial Meeting of the Ohio State Medical Society, held at Columbus, May 15, 16, and 17, 1895.

Miscellany.

Trional as a Hypnotic and Sedative in Internal Diseases.—In the *Wiener klinische Wochenschrift* for June 6th there is an article thus entitled, by Dr. G. Spitzer, of the Fifth Medical Division of the Imperial General Hospital, of Vienna, service of Professor Drasche.

A survey of the literature of hypnotic remedies, says the author, will show that by far the greatest number of all publications is derived from psychiatric clinics, which is readily conceivable when it is remembered that the administration of hypnotics belongs to those indispensable therapeutic measures which physicians in psychiatric clinics are compelled to resort to in their daily practice.

On the other hand, it can not be denied that the general practitioner can not dispense with hypnotic remedies, inasmuch as he is called upon to treat a considerable number of diseases in which the chief and essential object is to secure to the patient, by at least a few hours of quiet sleep, exemption from the most troublesome symptoms of his complaint. In the first place, we would name that numerous group of phthisical patients who are deprived of restful sleep by fever or profuse night sweats, but especially by the troublesome paroxysms of cough, often for periods of weeks. To an equal extent we are compelled to administer hypnotics in certain cases of heart disease in which it is not readily possible by the use of appropriate cardiac remedies to counteract the compensatory disturbances, in order to secure to the patient a few hours of sleep at night.

Inoperable cases of carcinoma are unfortunately a very lamentable object of internal therapeutics, and here also alleviation can be brought about in no other way than by the administration of hypnotics. The greatest difficulties are especially presented by cancers of the uterus, if metastases in the pelvis have developed and exert a continuous irritating effect upon the widely ramifying nerve plexuses in this cavity. To the same group belong cases of tabes with lancinating pains, those of compression myelitis due to caries of the spine, and those of severe neuralgia, hysteria, and neurasthenia.

With special reference to the types of disease mentioned above, the author says, it may be in place to report his observations with regard to the effect of trional. In the case of every new medicament we are compelled to proceed in a critical manner, he says, in order to inform ourselves accurately concerning the pharmacodynamics of the corresponding substance upon human beings, the more so as experiments on animals can not be transferred without reservation to human subjects. He proceeded in this manner with his tests of trional. His first aim was to study accurately the development of the sleep, the behavior of the patient during the sleep, his condition during spontaneous waking and during artificial awaking, inasmuch as in this direction no exact observations had been communicated in previous reports concerning the action of trional. For this reason he administered the drug early in the morning, after the patient had previously passed several sleepless nights without the use of a hypnotic.

He selected an individual who represented at the same time the type of the majority of the cases—that is, a person suffering from infiltration of both lungs, who was considerably reduced in nutrition and debilitated by prolonged sleeplessness and night sweats. The course of this case, which represented an *experimentum ad hominem*, was as follows:

Z. A., aged thirty years, a tailor, was admitted on February 19, 1895, with marked pulmonary tuberculosis. He was greatly debilitated by hectic fever with profuse night sweats, as well as by continued insomnia. The sleeplessness was also produced in part by severe pains in the right hypochondrium which continued during the night. After having passed several consecutive nights almost without sleep, the patient received on March 14th, at 10 A. M., thirty grains of trional dissolved in milk.

Before the administration of the drug his condition was as follows: Temperature, 100·7° F.; pulse, 90, very full and vigorous, regular; respirations, 33, quiet and regular; cardiac action regular, heart sounds normal.

In about half an hour after his taking the powder sleep ensued, notwithstanding the fact that no quiet could be secured in the sick chamber, partly on account of the walking about of the physicians and nurses, and partly on account of the continuous talking and coughing of other patients. The sleep continued uninterruptedly until 5.30 in the afternoon, and during all that time the patient was in a condition of perfect rest. At the afternoon visit he was awake and complained of sleepiness. He took his dinner and soon fell asleep again. During the following night there was quiet sleep.

March 15th, 8.30 A. M.—The patient is asleep. Pulse 115, regular. At 3 A. M. he awoke, but complained of sleepiness. He received a cold bath and his clothing was changed. At five in the afternoon he was found asleep; pulse 90. When awakened he answers all questions, but is very sleepy. At eleven in the evening he was completely awake.

March 16th, at 9 A. M., the patient stated that he had slept well during the night, but could not tell when and how often he had waked up. At the same time he could not remember that he had been wide awake at eleven o'clock the previous evening.

From the observation of this case the author thinks we may draw the conclusion that trional produces sleep quite rapidly, that the sleep does not differ essentially from that of a healthy person, and that an injurious influence upon the heart and respiration could not be observed. In contrast to the experiments which Drasche at one time undertook with chloral hydrate in a similar manner, it appears, he says, that the sleep from trional is not so deep as after the administration of chloral. The patient could be awakened much more readily from his sleep when subjected to marked stimulation of any kind than was noted under similar circumstances in the awaking from a sleep produced by chloral.

Although this experimental observation can not be regarded as a criterion for all cases, the author has nevertheless felt himself warranted in formulating the foregoing conclusions, since they coincide with his other therapeutic observations. From the large number of cases in which he has employed trional as a hypnotic he proceeds to cite especially those of which he possesses accurate reports.

Case I.—B. H., aged fifty years, a servant, was admitted on November 7, 1894, with intense pains in the sacral region and along the entire course of the right sciatic nerve, which were so violent that the patient could no longer follow his occupation. As he was unable to sleep, on account of the severe pains, he received in the evening of November 13th twenty-two grains of trional, which was rapidly followed by sleep continuing, with two brief interruptions in the night, until seven o'clock the following morning.

November 14th.—Trional discontinued. Patient sleeps from 8.30 in the evening until 11 P. M., but then remains wakeful until early in the morning.

15th.—In the evening he was given thirty grains, after which sleep at once occurred. On awaking, he complained of slight malaise.

16th.—Headaches during the day, for which reason trional was discontinued.

17th.—He had remained sleepless the previous night without trional until twelve, and then had slept until the morning. In the evening he had had thirty grains of trional.

18th.—Patient slept uninterruptedly until morning.

19th.—Had passed a sleepless night without trional. In the evening he received thirty grains.

20th.—Sleep ensued immediately after his taking the trional and continued unbroken for seven hours.

21st.—Sleepless night without trional.

Case II.—St. L., aged thirty-seven years, a housekeeper, was admitted on March 6, 1895, with violent intercostal neuralgia and rhachialgia. The pains were so intense that the patient could not sleep at night.

March 12th.—At 6.30 p. m., thirty grains of trional were administered in soup. At about eight o'clock the patient fell asleep, and slept without interruption until morning.

13th.—In the morning the patient felt refreshed by sleep. The pains also appeared to be less severe; no headache, no vertigo, and no nausea. Slept at night, with some interruption, without trional.

14th.—At 7 p. m., thirty grains of trional were given. This was followed by continuous sleep until 11 p. m. At this time the patient was waked up by a restless neighbor, but fell asleep after a short time and slept continuously until six in the morning.

15th.—At the morning visit the patient felt refreshed and invigorated by the sleep; no headache.

Case III.—St. M., aged thirty-five years, a washerwoman, with carcinoma uteri (degenerated cancer of the cervix with firm infiltration of the pelvic walls). She had intense pains day and night. In order to characterize the severity of the pains it may be remarked that the patient had attempted suicide for this reason with phosphorus. She received for several successive nights doses of thirty grains of trional, which were always followed by quiet sleep of several hours' duration.

Case IV.—W. F., aged twenty-nine years, suffering from marked pulmonary and laryngeal tuberculosis, received for sleeplessness of several weeks' duration doses of thirty grains of trional every evening, which were always followed by sleep lasting for several hours. Afterward trional proved inefficient, as well as subcutaneous injections of morphine.

Case V.—L. A., a woman, aged thirty-six years, suffered from hysteria and chronic bronchial catarrh and complained of prolonged sleeplessness. Cold baths in the evening and long walks were inefficient, as well as the administration of sugar with hypnotic suggestion. After taking thirty grains of trional she had a quiet sleep of several hours' duration. On awaking, the patient feels drowsy and complains of headache and vertigo, which on one occasion became so severe that she would have fallen down if she had not been held up.

Case VI.—P. E., aged sixty-seven years, a domestic, was admitted on March 4th, with pulmonary emphysema. There was prolonged and severe dyspnœa, with sleepless nights.

March 13th.—At 7 p. m., thirty grains of trional were given in soup, and sleep followed in half an hour. She slept uninterruptedly and without dreams until 2 a. m., and from that time on her sleep was interrupted at intervals.

14th.—At 9 a. m. the patient was still somewhat drowsy, but felt better than on the previous day; she had no headache. At 4 p. m. she felt well, but was sleepy.

Case VII.—M. M., aged eighteen years, a laborer, was affected with myelitis due to caries of the spine. There was prolonged insomnia, produced partly by violent pains. For several successive evenings he received doses of twenty-two grains of trional, after which he always enjoyed several hours of quiet sleep.

Case VIII.—S. C., aged forty-five years, a tailor, was suffering from sciatica and disturbed sleep owing to the pains. On March 15th, in the evening, he was given thirty grains of trional.

March 16th.—In the morning the patient said he had slept better than previously, but notwithstanding had waked up repeatedly. He complained of a feeling of weight in the head and felt as if he were drunk. In the evening he was given thirty grains of trional, after which he slept uninterruptedly until 1 a. m.; the rest of the night he had intervals of light slumber.

17th.—In the morning he had slight headache. No trional had been given and his sleep had been frequently interrupted, but he slept for short periods toward midnight and early in the morning.

18th.—Headache no longer present.

Case IX.—K. St., aged twenty-nine years, a carpenter, was affected with pulmonary tuberculosis attended with profuse night sweats. There had been continued insomnia for about fourteen days, the patient sleeping only an hour or two at night.

March 23d.—At 8 p. m. he was given thirty grains of trional in soup. At 8.30 he fell asleep and enjoyed uninterrupted sleep until 1 a. m., at which time he was waked up by a severe attack of cough. He soon, however, fell asleep again, and the sleep lasted until morning.

24th.—At 9 a. m. he felt somewhat tired and still drowsy; there was no headache or nausea.

Case X.—S. M., aged forty-six years, a married woman, was affected with myoma uteri and a cardiac lesion. She had not slept for four days before her admission into the hospital, and during the first nights following her entrance was very restless.

March 18th.—At 9.30 p. m. she took thirty grains of trional in water. Until 11 p. m. she slept quietly, but at this time waked up with malaise and nausea. At 12.30 she had an attack of vomiting, and during the rest of the night was sleepless and restless.

19th.—Patient languid and weak, with nausea.

Case XI.—B. A., aged forty-one years, a domestic, was suffering with mitral stenosis attended with marked compensatory disturbances, severe dyspnœa, and prolonged insomnia. She received every evening a sixth of a grain of morphine and passed the nights in a half-sitting posture and slight slumber.

March 14th.—At 9 a. m. she was much debilitated by sleeplessness. Pulse 110, small, but with fairly good tension; respirations 33, quiet and regular. At 7.30 in the evening she took thirty grains of trional, after which she soon fell asleep and enjoyed deep sleep until morning.

15th.—At 9 a. m. her pulse was 120, tension unaltered; respirations, 42. She felt somewhat languid, but had no headache.

Case XII.—B. J., a woman, had marked arterial sclerosis and was always very restless at night. On March 16th, at 7 p. m., she took thirty grains of trional in soup. She passed a very restless night and had no sleep until four in the morning.

March 17th.—Trional discontinued; in the evening a hypodermic injection of a sixth of a grain of morphine was given. She passed a sleepless night, but remained quiet.

Case XIII.—H. G., aged fifty-three years, a baker, had a fatty heart and severe dyspnœa. He had had very restless nights before his admission.

March 12th.—At 10.30 p. m. he took thirty grains of trional in water. He fell asleep at eleven and remained in light slumber until twelve, but was restless for the remainder of the night and had one attack of nausea.

13th.—At the morning visit he complained of slight vertigo, which continued for the day. At 9 p. m. he took thirty grains of trional in water, after which he remained almost completely sleepless during the night in a sitting posture.

14th.—At 8 a. m. he felt very weak; pulse 108, very small. During the day there was increasing weakness.

Case XIV.—F. F., aged fifty years, a tailor, was admitted on March 5, 1895, with mitral stenosis. There was orthopnœa, with slight cyanosis. For the most part the patient had had sleepless nights in a half-sitting posture.

March 12th.—At 9.30 p. m. he took thirty grains of trional in tea. The bitter taste was very disagreeable to him. After half an hour he fell asleep and slept uninterruptedly until twelve. During the rest of the night his sleep was frequently interrupted, resembling rather a slumber from which he frequently woke up.

13th.—At the morning visit the patient felt somewhat languid and was not refreshed by the short period of sleep. At 9.30 p. m., thirty grains more of trional were administered in tea. From 10 p. m. until early in the morning he had interrupted sleep, with nausea on waking.

14th.—He complained of languor and felt as if he were drunk. Slight headache; pulse 75, regular, of good tension. No sleep, without trional at night.

15th.—Pulse 80, weak and slightly arrhythmical. In the evening he had thirty grains of trional.

16th.—After the last dose of trional sleep occurred with frequent intervals of restlessness; during the waking state he had headache and vertigo, which persisted on the following day.

Case XV.—H. M., aged forty-eight years, a carpenter, was admitted on March 10th, with severe pulmonary emphysema. For fourteen days and nights he had been almost completely sleepless.

March 13th.—After a perfectly sleepless night he received, at 9 a. m., thirty grains of trional in water. His condition before the administration of the remedy was as follows: He lay on his back with the shoulders elevated; facial expression anxious: continued coughing; respiration, 26; pulse, 108. In a quarter of an hour after taking the powder he fell asleep, and at 11 a. m. was found sleeping quietly on his back. Pulse, 112; respiration, 30; slight perspiration. When touched with the hand he opened his eyes and then was asleep again. At four in the afternoon he was still sleeping quietly. The nurse stated that he had waked up only once, at two o'clock, in consequence of an attack of coughing, had sat up in bed, but had soon fallen asleep again. At 4.45 he awoke spontaneously and felt refreshed; respiration, 39; pulse, 105. He was still drowsy and slumbered in a sitting posture, refusing to take food. He passed the night in slumber in the same posture.

14th.—He complained of severe nausea, felt hazy and very weak, and still had a strong desire for sleep. Respirations, 24; pulse regular, intermittent at times and very small; nose and peripheral parts of the body cool. He received an infusion of digitalis, 1 to 100.

Case XVI.—M. F., aged sixty-seven years, a carpenter, was affected with pulmonary and intestinal tuberculosis and continued disturbance of sleep.

February 16th.—In the evening he was given thirty grains of trional, which was followed by quiet sleep from midnight to early in the morning.

Case XVII.—Ch. K., aged forty-four years, a laborer, was admitted with extensive tuberculous infiltrations. There were severe paroxysms of cough and there was continuous insomnia.

November 27th.—In the evening he took thirty grains of trional, and this was followed by sleep of several hours' duration.

29th.—After a second dose he had nausea.

Case XVIII.—H. A., a man, aged fifty-seven years, had pulmonary tuberculosis with insomnia.

November 19th.—In spite of thirty grains of trional, he failed to sleep and was very restless at night.

20th.—Trional discontinued; after taking 0·015 of a grain of duboisine he had sleep of three hours' duration.

Case XIX.—O. H., a man, aged forty years, was in the last stages of laryngeal phthisis. His sleep was disturbed by severe pains. Thirty grains of trional were administered every evening for a considerable time, and always produced sleep of several hours' duration.

Case XX.—S. F., aged thirty-four years, a locksmith, was admitted with pulmonary tuberculosis. He had passed several restless nights before his admission.

March 12th.—At 8.30 a. m. he took thirty grains of trional in water and soon fell asleep. The sleep was restless, with periods of loud crying, his eyes remaining closed.

13th.—At the morning visit he was still very sleepy; when aroused he opened his eyes, but soon closed them again. At five in the evening he was still drowsy.

Case XXI.—W. T., aged forty years, had tabes dorsualis with marked lancinating pains, also sleeplessness. For several consecutive evenings he took doses of thirty grains of trional, which were always followed by satisfactory sleep.

Case XXII.—J. F., aged sixty years, a servant, was affected with spondylitis and myelitis, with intense pains radiating over the sacral and lumbar regions, which deprived him of rest at night. Repeated doses of trional, thirty grains, always produced sleep of several hours' duration.

Case XXIII.—H. F., aged twenty-six years, a nurse, was suffering from marked pulmonary tuberculosis. There was continued sleeplessness, for which thirty grains of chloral hydrate were given, but could not be tolerated.

February 17th.—Thirty grains of trional were given, but failed to produce sleep. After taking the powder the patient felt very languid and weak and had one attack of vomiting. The cough was increased.

19th.—Trional, thirty grains, given again, but the patient remained sleepless.

20th.—After a sleepless night the patient's general condition was very unfavorable; there were nausea, frequent vomiting, and marked cough.

21st.—After an injection of 0·15 of a grain of morphine on the previous night, the patient had enjoyed good sleep.

Case XXIV.—L. H., aged twenty-five years, a business man, had advanced tuberculous infiltration of the lung, also neurasthenia. Owing to continued insomnia he was given a single dose of amyl hydrate, thirty grains, without effect. Afterward he took for a long time every evening thirty grains of trional, which always secured a quiet sleep of several hours' duration. After a prolonged administration of trional it lost its effect, and was replaced for a long time with chloral hydrate, forty-five grains. Finally morphine injections, 0·30 of a grain, were administered until his death.

Case XXV.—F. F., aged thirty-nine, a shoemaker, was phthisical and had persistent digestive disturbances, loss of appetite, constipation, and prolonged insomnia.

March 25th.—In the evening he took thirty grains of trional in soup. This was followed by quiet sleep until five in the morning, when he was awakened.

26th.—He felt very well subjectively. During the following night no sleep could be obtained without trional.

29th.—At 10 p. m. he took thirty grains of trional in soup. He soon fell asleep and slept without interruption until four in the morning; from then on he had interrupted sleep until 8.30. At 9.30 he felt well and much invigorated. Pulse, 96, regular and strong; respirations, 24, quiet and regular; temperature, 98° F.

Upon reviewing the cases cited, in connection with his experience in similar types of disease, the author maintains that trional is an excellent hypnotic, not only for the various forms of psychoses, as has been repeatedly recognized by other observers, but for patients suffering from pulmonary and cardiac affections. Sleep usually occurs promptly after the administration of the remedy, and in the majority of cases continues during the night. The fact that in a few of the cases sleep was interrupted for a time by violent paroxysms of cough is, he says, quite explicable. In a few cases he has observed a certain amount of drowsiness persisting during the forenoon of the next day and often for the entire day. In none of the cases was he able to observe a direct injurious influence upon the cardiac or respiratory function. He had paid special attention to the condition of tension and frequency of the pulse, as well as to the height of the pulse wave, and hence any such disturbance would have been noticeable. The symptoms of cardiac insufficiency occurring twenty-four hours after the administration of trional in Case XIV can scarcely be attributed to the remedy, he thinks, for on the day of its administration no cardiac symptoms of any kind appeared, but the patient felt invigorated immediately after the sleep.

As regards the influence of trional upon the digestive tract, the author has observed in some cases nausea and even actual vomiting upon awaking from the sleep. On the other hand, he refers to Case XXV, in which the patient, who suffered almost constantly from disturbances of the stomach and intestinal canal, presented none of these after the administration of the remedy. It would appear, therefore, says Dr. Spitzer, that in this respect a certain individual idiosyncrasy is present. The same phenomenon is also observed after the administration of other remedies, and it is a matter of common observation that some patients are absolutely unable to tolerate morphine, a drug which certainly can not be regarded as exerting an injurious influence upon the gastric and intestinal functions.

Trional, he adds, has manifested an admirable hypnotic and sedative effect in violent intercostal neuralgias, rhachialgias, sciatica, the lancinating pains of tabes, etc.

In contrasting the position of trional in internal diseases with that of other hypnotics and sedatives, we may, says the author, maintain with some justice that in its effect it most closely approximates to morphine, and may come to be employed as a substitute for the latter.

Epiphyseal Fractures of the Femur.—In the *Australasian Medical Gazette* for July 20th there is an article by Mr. F. W. Elsner, F. R. C. S. I., of Melbourne, who says that he has met with two instances of this accident. Both cases resulted from the same cause, yet the results in the two cases, he says, were so dissimilar that he has thought it worth while to record them. The first case was that of a little boy who had been kicked by a horse. When he was admitted into the hospital the right leg was drawn up on the inner side of the shaft of the femur, the end of which protruded externally as if about to perforate the skin. The tibia, the fibula, and the patella were all intact, but pulled inward and upward, as if the condyles had been split, and the inner one pulled up with the leg bones attached, by the powerful muscles of the thigh The leg was freely movable in all directions. There was no crepitus, and reduction of the dislocation or fracture without chloroform was utterly impossible. There was enormous swelling with effusion, and a great ecchymosis over and around the femoral protuberance showed that abundant hæmorrhage must have occurred at the seat of injury. After a considerable amount of time had been spent, says Mr. Elsner, in vainly endeavoring to bring the parts into apposition, the leg was put up with a long Liston splint and a weight at the foot, and counter-extension was employed by lowering the head and elevating the foot of the bed. For some time this effected a reduction of the shortening, but the external protuberance persisted, and the author feared it would break through the skin every day. Another attempt was made a week or so later, but without success. By way of experiment, he says, the limb was placed upon a MacIntyre splint and the tendo Achillis severed. By this means the appearance of the limb was somewhat improved, but that was all.

As the diagnosis, says the author, was as obscure as the treatment was ineffectual, Dr. Walley, of Tamworth Hospital, recommended cutting down upon the protruding bone in order to find out the real cause. On cutting down over the bone it was found that the epiphysis and condyles of the femur had become detached, and were securely seated upon the head of the tibia, while the protruding part was the end of the femur, which was rough and bare, but not like an ordinary fractured surface. Even with the fracture exposed, says Mr. Elsner, it was impossible to bring the surfaces into apposition or to pull the leg with its attachments into its proper position. With a Butcher's saw the author removed successive disks of the femur until the ends could be drawn together easily. Two inches of the bone had to be sawed off to do this, and he was extremely doubtful as to whether the boy would ever be able to use his leg again, also as to whether growth might not be arrested and the limb be dwarfed later in life. However, he says, this was clearly the surgical procedure indicated. The wound having been dressed, the limb was placed on a back splint with a footpiece. There was some colored discharge from the wound for some time, but never any pus, and union took place rapidly, the remarkable part of the process being that the shortening seemed to disappear. When the leg was put in plaster of Paris the patient was able to get about without inconvenience. He was discharged with a perfect limb and a fractional shortening, which was disappearing.

The second case was that of a boy, twelve years old, who was also kicked above the knee joint. Examination of the injured knee, says Mr. Elsner, showed absolutely nothing but increased mobility laterally, and a peculiar moist crepitus; there was no pain, there was absolutely no shortening whatever, and there was not a trace of swelling or hæmorrhage. A few rotatory movements were sufficient to place the dislocated parts into position. This caused no pain, and, as there was no shortening, a long Liston splint, with a short inside splint, was deemed sufficient to retain the fracture. About two weeks later, as there appeared half an inch of shortening on removing the straight splints, the author placed the leg upon an inclined plane. Four weeks after the injury the boy was able to lift his leg, and he was allowed to get up a little later. Six weeks after the accident he was able to get about on crutches. There was no distinct callus to be felt along the course of the femur, and the actual shortening was less than half an inch, which the author thinks will disappear when the pelvis becomes tilted a little.

It seems, says Mr. Elsner, that all epiphyseal separations are unpleasantly difficult to retain in correct approximation, more so than fractures pure and simple. In the case of the humerus, he says, he has several times observed union while the shaft was rotated outward, and consequent deformity. In the second case he attributes the shortening to a slight rotation outward of the shaft of the femur, through the action of the psoas and iliacus when the boy was raised in bed for nursing purposes.

Judging from these two cases, says the author, it seems that a separation of the epiphysis of the femur may occur without giving rise to many definite signs or symptoms, and, on the other hand, may be serious enough to demand active surgical interference. It appears to be good surgery to remove a piece of the bone if the parts can not be drawn together, and there is no danger of arrest of development incurred thereby. There does not seem to be any callus of consequence thrown out when the fracture has been reduced, and it is probable, says Mr. Elsner, that immediate union takes place.

The American Academy of Railway Surgeons.—The second annual meeting will be held in Chicago on September 25th, 26th, and 27th, under the presidency of Dr. C. K. Cole, of Helena, Mont. The programme includes the following papers: Eligibility for Railway Service, by Dr. R. D. Mussey, of Cincinnati; Some of the Benefits to be Derived from the Higher Order of Railway Surgery, by Dr. W. J. Galbraith, of Omaha, Neb.; Can we Improve upon the Sanitary Condition of our Cars? by Dr. William T. Dalby, of Salt Lake City, Utah; A Surgical Paper, by Dr. M. Cavana, of Oneida, N. Y.; Amputation at the Knee Joint, with a New Method, by Dr. W. H. Buechner, of Cleveland; the president's address, by Dr. C. K. Cole, of Helena, Mont.; Brain Injuries—their Mechanism and Symptoms, with Special Reference to Exact Diagnosis and Treatment, by Dr. J. W. Perkins, of Kansas City, Mo.; Fracture of the Forearm complicated with Dislocation, by Dr. E. Griswold, of Sharon, Pa.; An Experimental and Clinical Study of Colles's Fracture, by Dr. A. D. Bevan, of Chicago; An Unusual Case of Fracture of the Skull, by Dr. F. H. Peck, of Utica, N. Y.; An Address on Medico-legal Surgery, by the Hon. Tracy C. Becker, of Buffalo; A Practical Way of Testing Railway Employees for Color Blindness, by Dr. D. C. Bryant, of Omaha; Traumatic Neurosis, by Dr. Henry W. Coe, of Portland, Ore.; Verdicts obtained through Perjury, by Dr. C. B. Kibler, of Corry, Pa.; What should Disqualify Applicants for Railway Service? by Dr. John E. Owens, of Chicago; Personal Experience in Spinal Injuries, by Dr. J. F. Prichard, of Manitowoc, Wis.; Intravenous Injections of Neutral Salt Solution in the Treatment of Desperate Injuries, by Dr. C. B. Parker, of Cleveland; A Word on the Modern Use of the Terms Infection and Contagion, by Dr. R. Harvey Reed, of Columbus, Ohio; Railway Sanitation, by Dr. W. M. Bullard, of Wickes, Mont.; Sanitary Regulations Governing Railways, by Dr. L. E. Lemen, of Denver, Col.; The Use of Gold Foil in Fractures of the Cranium and Resulting Hernia Cerebri, by Dr. W. L. Estes, of Bethlehem, Pa.; The Transportation of Injured Employees, by Dr. F. H. Caldwell, of Sanford, Fla.; The Use of Cocaine in Minor Amputations, by Dr. C. M. Daniels, of Buffalo; Concussion of the Brain, by Dr. W. H. Elliott, of Savannah; Wounds that Open the Knee Joint, by Dr. C. D. Evans, of Columbus, Neb.; The Treatment of Wounds of the Face and Scalp, by Dr. Charles B. Fry, of Mattoon, Ill.; Injuries of the Hand and Fingers, by Dr. John McLean, of Pullman, Ill.; How to Distinguish between the Use of Heat and Cold in Railway Injuries, by Dr. William Mackie, of Milwaukee; and The Best Method of obtaining the Best Possible Aseptic Condition during Operations done at Places other than Hospitals, by Dr. J. F. Reger, of Littleton, W. Va.

Horseshoe Kidney.—In the August number of the *Annales des maladies des organes génito-urinaires* there is an abstract of an article on this subject which was published in the *Bulletin de la Société anatomique* for February, 1895, by M. G. Pochon, who presented to that society a case of horseshoe kidney which was distinguished by several peculiarities. A child, four years old, had died from generalized tuberculosis without having presented any urinary symptoms. At the autopsy the two kidneys were found to be united by displacement of the left kidney. The part which represented the right kidney was situated in the normal place, slightly lowered. The upper extremity corresponded to the upper part of the twelfth dorsal vertebra. The left part crossed the vertebral column obliquely and took a downward direction into the pelvis. The right kidney was normally capped with the suprarenal capsule, which did not exist on the left side. As the relations of the neighboring parts had been destroyed at the autopsy, says the author, it had been impossible to find it, but it was probable that it had occupied its normal place.

By its extent, its form, and the presence of two ureters, this formation could be considered only as a single kidney. Although it closely resembled it, it did not represent the classic form of horseshoe kidney; it was distinguished by its situation and the division of the blood-vessels.

In reality, says M. Pochon, the two kidneys are more frequently united in the form of a crescent in front of the vertebral column, the concave border taking an upward direction. The pelves of the two kidneys are very distinct and occupy the anterior and posterior parts of the organ, and the two ureters form a groove in front of the part on which they rest. The lower border of the kidney presents a median notch for the aorta, and its posterior surface a groove for the same vessel.

In the case mentioned, says the author, the two kidneys formed by their union a slightly obtuse angle opening above and to the left. The maximum dimensions taken on the anterior surface were nine centimetres in a vertical direction, and eight centimetres in a transverse direction; the distance from the right upper extremity to the left lower extremity was twelve centimetres. The entire upper part of the right kidney had kept its normal shape; the pelvis answered to the classic description, and was inserted in a vertical direction. It was different with the left pelvis, which was inserted transversely by two branches. This position, says M. Pochon, proved that the left kidney not only had become displaced, but that it had, moreover, been subjected to a movement of rotation in consequence of which its inner border had become the upper one, while its lower extremity had been displaced inward. The lower border showed the notch which was occupied by the right primitive iliac artery. This peculiarity had resulted from the anomaly of the vascular connections, due to the lowering of the renal mass.

On examining the posterior surface, says M. Pochon, it could be seen that the bifurcation of the abdominal aorta was situated at a very small distance from the upper border; the groove for this vessel was, in this case, occupied by the left primitive iliac artery; it then took an oblique direction downward and to the left, and its lower extremity did not correspond to the notch at the lower border. On the posterior surface were also seen the right primitive iliac artery, the middle sacral artery, and the lower vena cava, which had become bifurcated before reaching the lower border.

The right renal artery had two branches, one which entered the upper part of the right kidney, and the other, which had become bifurcated, furnished one branch to the right kidney and one to the left kidney, which it approached after having run parallel with the right border of the pelvis. It was accompanied in its course by a branch of the renal vein which ran parallel to it outside. The left kidney received, besides, a small supplementary artery which sprang from the left part of the aorta at the level of the upper border of the organ. This artery was bifurcated and threw out two branches, of which one entered a renal lobule which surrounded the division of the pelvis, and the other entered the angle formed by the kidney and the external border of the pelvis.

Each kidney, says M. Pochon, possessed a venous branch corresponding to the artery furnished by the division of the lower branch of the renal artery. These two veins were united to form a single renal vein, which emptied into the anterior part of the lower vena cava. In this case there were two small veins in addition which sprang from the upper part of the right kidney, one by a single root, the other by two roots.

Of all anatomical anomalies, says the author, horseshoe kidney is considered the commonest; still there exist varieties of which this case is an example.

Oysters and Typhoid Fever.—The *Lyon médical* for August 18th publishes an article on this subject by M. J. Lavis, of Monte Carlo. The author states that when he began to practise in Naples he was struck with the number of gastric troubles which presented themselves, especially among newly arrived persons. These disorders varied in intensity, ranging from slight indispositions to violent attacks of gastroenteritis. He was led to discover the cause of these attacks by observing that each time he and his wife had eaten oysters they were taken sick afterward. The symptoms were nausea, vomiting, dysenteric diarrhœa accompanied by characteristic colic of the large intestine, and tenesmus. These facts, says the author, led him to question his patients, among whom he found a number in whom the ingestion of oysters had been coincident with the beginning of the disease.

One of the most serious results ascertained in these observations was that a certain proportion of the attacks of gastro-enteric catarrh was more or less rebellious to treatment, which was successful, however, in the majority of cases. The chronic cases were always accompanied by a degree of fever out of proportion to the local symptoms of simple catarrh, indicating the existence of an infection, or, at least, ptomaine poisoning. In the minority of cases, says M. Lavis, the typical typhoid fever of the Mediterranean developed. In other cases the symptoms of typhoid fever set in on the twelfth or the sixteenth day after the ingestion of the oysters, although no apparent derangement had manifested itself immediately after eating them.

With regard to the oyster itself, the author found that it was simply the passive vehicle of infection. Those consumed in Naples, and in Rome also, are found in different parts where there is no reason to suspect infection from human excreta. They are kept alive, however, in eel-pots which are sunk in the waters of the port of Santa Lucia, where they remain for weeks, and even months. At a short distance from the port a large sewer empties its contents into the water, which is not very deep and almost stagnant. Consequently, says the author, when these oysters are eaten a certain amount of the infected water is taken into the system. This infectious matter contains bacilli of typhoid fever and of cholera.

The variety of the morbid process, says the author, engendered by a food charged with the infectious matter of a sewer can not be explained except by the peculiar susceptibilities of each individual, and probably also by the variety of organisms that predominate at one time or another in the infectious matters.

The author states that he has often eaten oysters that were taken fresh from Lake Fusaro and Lake Lucrin and experienced no bad results. This shows, he thinks, that the oyster in itself is not the cause of the infection observed by him, but that it is caused by the polluted water in which it is kept.

It is only by the strictest supervision, he says, of the oyster depots in London, many of which are in a disgusting sanitary condition, also by the supervision of the water in which the oysters are kept, that we can prevent the abandonment of a food that is valuable alike for convalescents and the overtaxed brain. These observations apply also to all shellfish eaten raw.

The Treatment of Diabetes Mellitus by the Administration of Brewer's Yeast.—At a recent meeting of the *Congrès français de médecine interne*, a report of which appears in the *Presse médicale* for August 24th, M. E. Cassaet read a paper on this subject. He stated that he had given daily doses of an ounce and a half of yeast at the principal meals to three diabetics, and favorable results had been obtained, although its employment had not been very prolonged, because it was difficult during the hot weather to prevent acetic or putrid fermentation.

A few minutes after its ingestion a very large quantity of gas was produced, which was eliminated by frequent eructations, and afterward, during the first or second day, by a very fœtid diarrhœa accompanied with much gas. A few days later tolerance was established, and the patients very soon felt the good effects. Their general condition was restored, their appetite returned, their strength increased, their pains diminished, and their weight became modified. M. Cassaet said that in three patients the weight had increased from three to eight pounds after fifteen days of the treatment. One of the patients had phthisis and had lost thirteen kilogrammes in the course of two years. Another had a very serious form of diabetes. M. Cassaet thought that the direct action of the yeast was proved by the fact that the weight fell when the treatment was suspended. The strength increased in proportion, and the author had noted an increase of from twelve to twenty kilogrammes of grasping force in the right hand, and from seventeen to twenty-two kilogrammes in the left hand, when a cachectic diabetic had gained five pounds. The urine also became improved; the urea remained stationary or increased, and the sugar diminished. In one case, said M. Cassaet, it had fallen from half an ounce to eighty-one grains to a pint.

Among diabetics who were fat, thin, or phthisical, the yeast produced the same results; the general condition was improved, the sugar was diminished, and the weight increased. The latter result, said M. Cassaet, must be taken into consideration as being important and demonstrating the efficacy of the treatment, for it was generally difficult to maintain, and especially to increase, the weight of a cachectic diabetic.

With regard to the mode of action of the yeast, he said, it had not yet been established that it depended rather on its cellular ferment than on the energy of its soluble ferment. Ulterior experiments, he said, would establish this.

Nurses at Hotels.—Under the heading of Hotel Snobbery, the *Lancet* says:

"The use of a uniform, notwithstanding certain obvious advantages conferred by it, is occasionally found by its wearer to be somewhat inconvenient. This would not be remarkable if the dress itself were designed in striking contrast with public taste or good feeling. Neither should it surprise us that the misconduct of individuals can and does bring discredit upon their cloth and all else connected with them. When, on the other hand, no ground of offense exists either in the persons or their clothes it were folly to raise objections against either. Yet this is done, and more, since instances might be cited in which, although the outward aspect has been entirely becoming and the conduct above reproach, still the sentence in some corners of society has been one of ostracism. We may quote an example of this kind which was recently noticed in the daily press. A hospital nurse, having gone to visit her father at a hotel in the West-end of London, appeared in the breakfast room in uniform. She was there informed that she could not be admitted as a guest, as her dress was objected to. Why, we are unable to say, and we are equally at a loss to discover any reasonable excuse for a prohibition so inhospitable and so near of kin to insolence. Was the garb too plain, too work-a-day, and, if so, wherein was it a whit less neat or less reputable than that of a deaconess or a sister of mercy, or for that matter of a great many ladies not clad in uniform? Are we to suppose that the hospitality of this hotel is denied on principle to every form of dress below a certain expensive standard of quality? Perhaps, however, the nurse's costume is considered to be suggestive of morbid associations, of contagia, and the like. If this be the case, we can reassure a diffident manager and the over-nervous occupants of his establishment. No body of persons in the kingdom understand and obey more fully than do professional nurses the requirements of sanitation in regard to such matters. We hope, therefore, that neither the pretensions of snobbish custom nor a somewhat cowardly excess of zeal for sanitation will long be suffered to curtail the just privileges of a class whose existence among us is as great a credit as a boon to society."

The Therapeutic Action of Ingestol.—In the *Nouveaux remèdes* for August 24th there is an abstract of an article published by the *Reichs-medicinischer Anzeiger* in which Dr. Golliner gives an account of the excellent results obtained by him with the use of ingestol. One bottleful [*sic*] of the drug, given in doses of a wineglassful three times a day, considerably ameliorated the condition of a patient who suffered with very marked dilatation of the stomach. The sensation of pressure disappeared, the vomiting ceased, and the appetite returned. Eight days after his beginning the treatment the digestion had become normal. The same results were obtained in a case where the patient had suffered for three years with the same trouble.

This drug has also shown itself efficacious in cholera infantum and in the acute gastro-enteritis of adults. The therapeutic action of ingestol, says the author, may be attributed to the purgative salts in its composition, which cause the fermented contents of the stomach to pass rapidly into the intestine, whence they are expelled, thus preventing their noxious action on the organism. Ingestol is composed of the following drugs: Sulphate of magnesium, 23 grains; sodium sulphate, 14 grains; potassium sulphate and calcium sulphate, each, 1·5 grain; chloride of magnesium, 8 grains; sodium chloride, 12 grains; sodium carbonate, 0·8 of a grain; calcium carbonate, 0·375 of a grain; bromide of magnesium, 0·015 of a grain; salicylic acid, iron oxide, and iron citrate, each, 0·015 of a grain; spirit of ether, 8 grains; aromatic water, 3 ounces. These figures, says Dr. Golliner, are furnished by the manufacturer.

The Usefulness of Oxysparteine Injections before Chloroform Anæsthesia.—The *Gazette médicale de Paris* for August 24th publishes a report of a recent meeting of the *Académie des sciences* at which M. Langlois and M. Maurange presented a paper on this subject. They alluded to the tonic and regulating action of sparteine on the hearts of those subjected to chloroform anæsthesia, and stated that Hurtle had shown how oxysparteine exercised a still more energetic action on the heart. Their researches, they said, had also led them to substitute oxysparteine for sparteine in their clinics.

The excitability of the pneumogastric nerve was diminished after injections of oxysparteine. The vascular pressure was maintained at a sufficient tension during a long period of anæsthesia.

As this drug was somewhat more active than sparteine, the dose for an injection should be smaller. With the latter, from three fifths of a grain to three fourths of a grain of sparteine, and three twentieths of a grain of morphine, injected an hour before the operation, a rapid narcosis was produced and easily maintained with a little chloroform, if the heart was regular. The same effects, however, could be obtained with oxysparteine alone in doses of from nine twentieths of a grain to three fifths of a grain.

The Complaint of the Manufacturing Chemist.—Under this heading the *Journal of the American Medical Association* says:

"For many years there have been complaints that the druggist, in filling prescriptions, either disregarded the wishes of the prescriber *in toto* or only made a pretense of using the particular preparation designated in the prescription.

"One chemist in St. Louis recently informed the *Journal* that by an actual test in more than one half the cases where his preparation was asked for the article obtained was not his own make. Other manufacturers have made the same complaint. Professional sentiment could crush this business of substitution if once concentrated on this question. If Dr. Smith writes for 'Jibb's ether,' 'Kibb's chloroform,' or 'Maudlin & Co.'s fluid extract,' if Jibbs, Kibbs, and Maudlin & Co. are reputable manufacturers it should be furnished. When Dr. Smith writes a prescription and druggist A receives it, A is bound in honor to either furnish the exact brand called for or to privately communicate with Dr. Smith and explain *why* he can not do so. There is no more reason why it should not be recognized as dishonesty to substitute one article for another than there is reason to condone any other method of obtaining money under false pretenses. Common honesty requires that a prescription should be filled with the identical articles named therein, and any druggist who makes a business of substitution should be promptly dropped by the profession.

"At least, the Illinois Legislature, at its last session, seems to have so regarded it, for a penalty was enacted on all pharmacists who should substitute one drug for another."

Original Communications.

A NEW METHOD OF HYSTERORRHAPHY:

VENTRAL FIXATION BY MEANS OF THE DETACHED AND REPLACED URACHUS.

By GEORGE R. FOWLER, M. D.,
PROFESSOR OF SURGERY IN THE NEW YORK POLYCLINIC;
SURGEON TO ST. MARY'S HOSPITAL
AND TO THE METHODIST EPISCOPAL HOSPITAL, BROOKLYN.

In June, 1890, I reported three cases of otherwise inoperable uterine fibroma, in which an incision into the tumor with the thermo-cautery following an abdominal section resulted in the sloughing away through the abdominal wound, left open for the purpose, of the fibromatous mass.* While I am aware that the method thus employed has but little to recommend it in the present state of our knowledge, and save under very exceptional circumstances is very unlikely to be repeated even by its originator, yet the experience has been valuable to me in the light of the after-history of these cases. The first patient operated on visits me occasionally for examination. It was noted about a year and a half following the operation that the uterus, which up to that time had been held closely applied to the anterior abdominal wall by the mass of cicatricial tissue which marked the site of the abdominal wound and the point of exit of the sloughing portions of the tumor, was resuming the position of retroversion which existed prior to the operation. This became more and more marked as time went on until well-marked retroversion was present. There is no trace of a return of the original growth.

While the first case was purely an accidental procedure —*i. e.*, one not formally planned or designed to accomplish the result finally reached, so far as the destruction of the tumor was concerned—the second was designed to bring about this result. The sinus persisted in this case for upward of two years, healing and breaking down again, until finally it closed altogether. I have examined this patient within three months, and find that in spite of the fact that there is a large mass of scar tissue which marks the site of the original wound, the cicatricial cordlike connection which held the uterus forward during the first year and a half has gradually stretched until the organ is permitted to resume the position of retroversion which it had been forced into by the presence of the large and anteriorly placed fibroma.

The third case reported also has an interesting after-history. It was one of cystic fibroma, in which it was found impossible, upon opening the abdomen, to remove the growth on account of extensive adhesions to the bladder and intestines. A similar failure had followed an attempt at its removal by a well-known surgeon of Jamaica, W. I., two years previously. The method of intracapsular sloughing was attempted in this case, but was only partially successful. The cystic portion of the growth was discharged, reducing the latter to less than one half its original size, and sloughing portions of the tumor continued to come away through the opening in the abdominal wound for about three months, at the end of which time she returned to her home in the West Indies, greatly improved in health, but with a mass representing about one fifth of the original growth through which a large sinus led to the interior.

Two years afterward this patient again visited the United States and was brought to my office by Dr. J. S. King for examination. The sinus had never permanently closed, but gave her but very little trouble. She was about to marry, and desired to know if anything further could be done for the removal of the remains of the tumor. Upon investigating the condition of the latter I was surprised to find that instead of being firmly bound down by adhesions and almost absolutely immovable, as upon the occasion of the first and second abdominal sections, in which condition it had been when last examined by me prior to her departure for home, it was freely movable in almost all directions. Accordingly I advised that a third attempt be made to remove the growth, which was accepted. The operation was performed at the Methodist Episcopal Hospital, January 20, 1892. The extensive adhesions which had absolutely precluded the removal of the growth upon the former occasions of opening the abdomen had completely disappeared, and what remained of the tumor was enucleated with ease. The patient made an uneventful recovery.

A fourth case, which illustrates the instability of peritoneal adhesions when the cause of their production has ceased, is here likewise offered.

It is that of a woman, a patient of Dr. Small, of this city, who was admitted to my service in the Methodist Episcopal Hospital, December 31, 1890, with intestinal obstruction of slow development, the result of an occlusion of the rectum, which at the time was believed to be syphilitic. A left-sided inguinal colostomy was performed in order to relieve the immediate necessities of the case, and the patient given large doses of iodide of potassium. She left the hospital at the end of three months with the obstruction in the rectum sufficiently relieved to permit satisfactory movements by the normal route, although there was still some fæcal matter coming away through the artificial anus in the left inguinal region. In a little over a year from this time I was requested to see this patient by the late Dr. Wilbur F. Crutchley. I found her again suffering from intestinal obstruction. The artificial anus had completely closed in spite of an effort to keep it open, and the growth in the rectum had increased considerably in size. An incision was made through the scar which marked the site of the former artificial anus, in the belief that the operation would simply require an incision into the large intestine without necessarily opening into the peritoneal cavity. It was found, however, that the gut was absolutely free from attachment to the anterior abdominal wall. Every vestige of the formerly existing adhesions had disappeared, and it became necessary to repeat all the steps of the procedure for the formation of an artificial anus.

From these experiences I am convinced that peritoneal adhesions and intra-abdominal cicatricial new-formation connective tissue are not entirely trustworthy when employed for physiological purposes. So long as irritative influences in the neighborhood exist, such, for example, as were present during the time that fæcal matter discharged from the artificial anus in the last case cited, or neoplasms whose presence and increasing growth produce circulatory and nutritive disturbances in serous surfaces, the agglutination of the latter is maintained. But in the absence of these there is an inherent tendency on the part of the peritoneal structures to restoration of the relation of parts as they existed prior to the formation of adhesions, the latter becoming stretched and perhaps disappearing entirely. In this belief I have been confirmed by the after-behavior of cases of uterine retro-displacements upon which I have operated by methods of hysterorrhaphy and ventral fixation. The methods employed have been (1) suture of the fundus to the anterior abdominal wall by means of the same sutures with which the abdominal wound was closed, these being removed in about ten days; (2) fixation by means of silk sutures applied to the fundus and attaching this to the parietal peritonæum in front; (3) suture of the anterior margin of the broad ligament, together with the fundus uteri, to the peritonæum of the anterior abdominal wall; (4) removal of one or both ovaries and Fallopian tubes, suturing the stumps anteriorly, and adding thereto the procedure last mentioned. At different periods of time, varying with the extent of the adhesions, these have shown more or less tendency to relapse, and some, particularly those in the first group, as might have been expected, have been complete failures almost from the very commencement.

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* A New Operation for the Cure of Uterine Myomata. Intracapsular Sloughing through an Abdominal Incision. *New York Medical Journal*, June 7, 1890.

With the view of improving the present methods of hysterorrhaphy I cast about for some structure which should sufficiently approach the normal to afford a greater stability for support of the organ when restored to its normal position, with the result that I have designed the following operation, which I have applied in ten cases thus far, without discovering any contraindication to its employment. In the hope that it will prove useful in securing comfort for a reasonable time, if not permanently, to a large class of sufferers, and with the desire that it may be criticised by those who may see sufficient objection to its use as to prevent them from employing it, and given a trial with the view of gaining future experience as to its applicability to the class of cases under consideration by those who, like myself, have sufficient faith in its usefulness to warrant its employment, it is presented in this preliminary note.

The operation consists essentially in making use of the superior ligament of the bladder for the purpose of forming an artificial utero-ventral ligament. This prominent fold of peritonæum extends from the summit of the bladder to the umbilicus, and incloses the urachus and the obliterated hypogastric arteries. The urachus itself consists of a strong fibro-muscular impervious cord, which, at its central portion, averages eight millimetres in circumference, and represents that portion of the allantoic vesicle which remains after the formation of the bladder. It is narrowest at the umbilicus and broadest at its attachment to the bladder. The procedure is carried out as follows: The usual median abdominal incision is made, and the urachus identified as it passes close to the edge of the peritoneal incision upon the right side. Its upper extremity is cut directly across, and the cord, together with a ribbon-shaped strip of the peritonæum about one centimetre wide, is detached by dissecting it loose with the scissors down to the level of the lower angle of the abdominal wound. The uterus is then brought up into position and a Cleveland ligature carrier passed beneath its serous and subserous connective-tissue investment at a point upon the posterior aspect of the fundus.* The point of the ligature carrier emerges about a centimetre from the place of entrance, its jaws are opened and made to grasp the free end of the ribbon of peritonæum containing the urachus, and this is drawn through the opening made by the ligature carrier by tightening its jaws and withdrawing the latter. The urachus is then replaced and secured in position by being included in the layer of sutures which close the peritoneal opening.

The entire operative procedure can be accomplished in a remarkably short space of time, an advantage which can scarcely be overestimated when the fact is taken into account that operations performed under these circumstances frequently constitute but a part of a series of operations performed at one sitting and designed to correct several different pathological conditions resulting from the parturient act—viz., lacerations of the perineal and levator ani muscles, relaxed conditions of the vaginal walls and resulting cystocele and rectocele, lacerations of the cervix uteri, hypertrophic elongation of the cervix, and endometritis and corporeal metritis with retroversion and prolapsus or procidentia. Under any circumstances, however, from the standpoint of the anæsthetic and infection risks, the surgeon who, other things being equal, reduces to the minimum the length of time required for an intra-abdominal operative procedure will always be able to boast of the best results. In addition to the advantages incident to a rapid performance of the operation itself, there is an additional reason for the employment of this method; this consists in the avoidance of buried sutures of silk, with the possibility of these becoming sources of irritation and finally abscesses, or of catgut, which is always difficult of sterilization by simple methods, as well as uncertain in the length of time it will maintain its integrity in the tissues as suture material.

Care should be taken to avoid leaving an open space just above the fundus and between the abdominal wall and the detached urachus. The urachus should only be detached in a downward direction sufficiently far to serve the purpose of a sling for the uterus, and the lowest suture in the abdominal wall should be passed through the urachus close to the point where the latter leaves the uterus.

An Honorary Degree.—At a recent meeting of the trustees of Jefferson Medical College, Philadelphia, the honorary degree of LL. D. was conferred on Dr. John Collins Warren, of Boston, professor of surgery in Harvard University.

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* The best point for supporting the uterus in its normal position in this method of operating is at the place upon the posterior aspect of the organ where the convexly shaped fundus joins the posterior uterine wall.

SANITARIUMS
FOR THE TREATMENT AND PROPHYLAXIS OF PULMONARY PHTHISIS.

By S. A. KNOPF, M. D.,
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The ever-increasing mortality from pulmonary tuberculosis, the failure of all so-called specific treatments for this disease, and the surprising results claimed by the advocates of the hygienic and dietetic treatment in closed establishments (sanitariums exclusively for consumptives), induced me to investigate this treatment and make its thorough study the subject of my thesis for the degree of Doctor of Medicine at the faculty of Paris.*

One of my honored teachers at Bellevue Hospital Medical College, New York, to whom I submitted the plan of my work on his visit to Paris about a year ago, wished me, after its publication in French, to write a synopsis of this work for an American medical journal.

In compliance with this request I will try to give the contents of the various chapters in as brief a way as possible, trusting it may prove of some interest to my medical brethren at home.

To prepare myself well for the work I visited most of the important sanitariums and special hospitals where pulmonary phthisis is treated exclusively, such as Goerbersdorf, Falkenstein, Reiboldsgrün, St. Blasien, Hohenhonnef, in Germany; Davos, Leysin, in Switzerland; Ventnor and Brompton Hospital in England; Craigleith in Scotland; and Canigou, Berck, etc., in France, and the various Mediterranean resorts.

The historical chapter goes to prove that the hygienic and dietetic treatment, such as is practised in these sanitariums, was not new even to Hippocrates, who recommended to his phthisical patients a sober life, an appropriate diet, and moderate exercise. In his seventh volume, paragraph 49, he says:

"This (phthisical) patient may take his walking exercises if walking agrees with him; if not, let him rest as much as possible."

We thus see that the two most distinguished modern phthisio-therapeutists—Brehmer, with his graded promenade and diet cure, and Dettweiler, who added to this the rest cure in the open air (*Liegekur*)—had a most illustrious predecessor in Hippocrates.

A few more interesting historical facts may be noted. Celsus (30 B. C. to 50 A. D.) recommended sea voyages to the most vigorous of his patients; the feeble ones he sent to the country. Galenus (131 to 200 A. D.) advocated mountain air, instituted the milk cure, and was perhaps the first to think of the contagious nature of pulmonary consumption. In the tenth century flourished the Arabian school, which followed the precepts of Galenus, and reported the first authentic cures of tuberculosis. From this time up to the fifteenth century, in medicine as in other sciences, little progress was made.

After that period we have Van Helmont (1577 to 1644), who advocated mountain air, and Willis, of London (1622 to 1675), who reported several cures by exercise on horseback. Montano and Morgagni, who lived about this time, taught that consumption is a most contagious disease, the former thinking it sufficient, in order to contract the malady, to pass with a naked foot over the expectoration of a consumptive; and the latter would never make the post-mortem examination of a phthisical patient.

Boerhaave (1688 to 1783) and his pupil Van Swieten (1700 to 1772) distinguished themselves by being more selective in the choice of climate, not sending all consumptives indiscriminately to the same place.

The great Laennec, who taught us so much in auscultation of the heart and lungs, believed in the efficacy of sea air, and his faith therein was so implicit that, phthisical himself, he tried to produce this air artificially in his bedroom.

May, in 1791, was the first to treat his phthisical patients exclusively by diet. Bennet, like Laennec, himself a consumptive, inspired by the practical ideas of the nurse Florence Nightingale, changed his mode of life by being almost continually in the open air, as much as possible in the sunlight, and taking an abundance of excellent food. This resulted in his cure, and he became a strong advocate of the hygienic and dietetic treatment for tuberculosis.

In 1856 Dr. Hermann Brehmer opened the first sanitarium for consumptives in Goerbersdorf, Silesia, and his marvelous cures surprised the medical world. His most distinguished pupil, Professor Dettweiler, became director of the sanitarium of Falkenstein in 1876. Special hospitals for consumptives were first erected in England some forty years ago.

The idea of building sanitariums for the poor is now one of the questions of the day over all the civilized world.

To the honor of the United States be it said that the Adirondack Cottage Hospital at Saranac Lake, New York, was one of the first of these institutions to open its doors to the poorer class among phthisical patients.

In regard to statistics, I will merely sum up in the statement that one seventh of all deaths are due to pulmonary phthisis. Nevertheless, among the responses to my letters of inquiry regarding the mortality due to consumption, one from Dr. Tatham, inspector in the office of the Registrar General of England and Wales, and another from Dr. S. F. Murphy, inspector of the Public Health Department of London, are of especial interest. They prove what can be accomplished to diminish this mortality by the creation of special hospitals and of good public hygiene.

Dr. Tatham gives the following statistics for England and Wales:

1870	mortality by pulmonary phthisis for 1,000,000 inhab.	..2,410
1875	" " " " " " "	...2,202
1880	" " " " " " "	...1,869
1885	" " " " " " "	...1,770
1890	" " " " " " "	...1,682
1893	" " " " " " "	...1,468

And Dr. Murphy gives for London:

1891	mortality by pulmonary phthisis for 1,000,000 inhab.	..2,200
1893	" " " " " " "	...1,900

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* *Les Sanatoria. Traitement et prophylaxie de la phthisie pulmonaire.* Par le Docteur S. A. Knopf. Paris: George Carré, editeur.

Contagion and Sanitary Laws. — Regarding the contagious nature of the disease there is no longer a doubt among medical men, and even the public at large is beginning to be aware of this fact, and to realize the importance of the sanitary laws and regulations issued now and then by the respective authorities. But as yet, in places where sanitary laws are most needed, as, for example, in certain health resorts of the United States and Europe, where thousands of phthisical patients flock every year to pass the winter, there may exist some few regulations, the execution of which is voluntary, but nothing more. In some cases hotel proprietors are required to disinfect the room in which a consumptive has died, but no hygienic precautions are enforced concerning the patient during his sickness. He is at liberty to go about, expectorate where he pleases, and distribute his seven million or more bacilli of tuberculosis each day, thus endangering the lives of thousands of his fellow-men.

For that it is the dried expectoration, which in its pulverized form is inhaled by the well and reinhaled by the consumptive, that does the most harm, has been amply demonstrated in the bacteriological laboratories of the Old and the New World.

Another source of contagion is in the ingestion of the meat and milk of tuberculous animals. In this direction the sanitary laws of all countries have done their best, in some cases going even too far in condemning meat unnecessarily. This, at least, was the opinion of the congress at London in 1891, where moderation was proposed from many sides.

A less frequent source of contagion is from the fæcal matter of those afflicted with intestinal tuberculosis. A thorough disinfection in such cases is easily carried out.

Spillman and Haushalter, of Nancy, have demonstrated the presence of Koch's bacillus of tuberculosis in the excrements of flies, and in the bodies of these insects caught in the room of a consumptive. Covered spittoons would suffice to guard against this possible mode of dissemination.

L. H. Petit has discovered the bacillus in the cigar and cigarette stumps thrown away by phthisical patients, and these remnants are eagerly sought for by the Parisian beggars to be sold anew. Hand-made cigars may also contain the bacillus, and the use of cigar and cigarette holders should be strongly recommended. While it is true that the nicotine kills the tuberculosis bacillus, Grancher, Straus, Prudden, Hodenpyl, and others have demonstrated the danger which resides even in the dead microbes. The pathological process produced by the dead bacilli has been termed by Grancher and Ledoux-Lebard *necro-tuberculosis.*

Finally, according to the discoveries of Lortet and Despeignes, a possible source of contagion is from the bacilli brought to the surface of the ground by earthworms. The burning of all meat condemned as tuberculous and the vulgarization of cremation of the dead would do away with this last danger.

Now what else can we do to guard ourselves and our fellow-men against these various sources of contagion? I say ourselves, for last year, when Professor Straus examined the nasal cavities of a large number of assistants, students, and nurses at the Hôpital de la Charité, at Paris, in many cases, all apparently healthy subjects, he found the bacillus of tuberculosis in the nasal secretions. The inoculation of guinea-pigs proved this secretion to be in some cases quite virulent. Happily, Nature seems to have provided the normal nasal mucus with the power of destroying this virulence. This secretion seems to be "bactericidal," as Wurtz and Lermoyez call it. By what conditions this power of defense is lost is difficult to determine or explain. Perhaps it is analogous to the fact that puerperal fever may not appear in a patient confined under the most septic conditions, while it may appear with all intensity in another where an aseptic condition has been most carefully sought, but perhaps some slight error committed.

But our ignorance as to what makes a secretion "bactericidal" should only spur us to double vigilance in the matter. As we said before, the main source of contagion is in the sputa expectorated everywhere by careless or ignorant patients which, dried and pulverized, floats in the air, especially in our large cities, in theatres, churches, public meeting places, etc., and above all in badly managed hospitals and sick-rooms.

In some countries, as Canada, Turkey, and Australia, there are laws classing phthisis pulmonalis among the contagious diseases—small-pox, diphtheria, scarlatina, etc. In Toronto phthisical children are not allowed in the public schools, and in Sydney, Australia, any one caught spitting on the floor of a public building or in the street is fined five dollars.

In Germany and France, and in some cities of the United States, certain regulations exist, but no laws are as yet enacted on the subject. The most heroic efforts have been made by the city of New York, thanks to the energy of the board of health and our distinguished teacher, Professor Biggs.

Other municipal governments have contented themselves by aiding private efforts, such as the leagues against tuberculosis. I must mention here the excellent work done by Dr. Lancey, of Rochester.

To guard against the propagation of tuberculosis I do not think we can do more, without interfering with the individual liberty of a free citizen, than—

1. Classing phthisis pulmonalis among the contagious diseases, and making its declaration by the attending physician obligatory.

2. Creating a special sanitary office, which should provide instruction in regard to prophylactic measures, and attend to the disinfection of the rooms occupied by patients not only after death, but also at regular intervals during the sickness. For the well-to-do a tax might be fixed, but for the poor it should be free. Pocket spittoons should also be given free to those not able to pay for them.

3. Examining factories, stores, schools, convents, barracks, hospitals, etc., for their sanitary conditions, and providing properly kept spittoons in all public places, and prohibiting streets to be swept when dry.

4. Creating as many sanitariums and special hospitals as possible, exclusively for phthisical patients, where they should be received at all stages of the disease. For, if in

the primary stage, they have the best chance there of a complete recovery. If a simple amelioration can be expected, they will there learn how to live, to prolong their lives, and to avoid doing harm to others. If so far advanced that all hope of recovery must be abandoned, they should there be nursed and made comfortable, for it is in a properly conducted sanitarium that such cases can be best cared for, and the dangers of contagion rendered least possible.

That through such measures a most efficacious prophylaxis would be obtained can hardly be denied, and that by proper treatment a great many cases can be cured, and permanently so, we will see in what is to follow.

On the Curability of Pulmonary Phthisis.—I do not share the very optimistic opinion expressed by Professor Jaccoud, of Paris, who says that pulmonary consumption can be cured in all its stages. I rather incline toward Professor Bouchard's views, who thinks it curable in a large number of cases. Pathological proofs of the curability of tuberculosis of the lungs are frequently seen in carefully observed post-mortem examinations, where death was due to some other cause. In six hundred and seventy autopsies made on individuals who had died of other diseases, Flint found seventy-five cases of healed tuberculous lesions. Out of seven hundred and sixty-three autopsies, Loomis found seventy-one cases. Dr. James W. Walker, who had the kindness to look over the statistics of the morgue of Chicago for me, found that in four per cent. of the cases healed tuberculosis was recorded; but he thinks this far inferior to the number that would have been found had the examinations been more carefully made and recorded.

Dr. Bonardel, professor of legal medicine at Paris, tells me that among the autopsies made at the morgue it was a most frequent occurrence to see tuberculous lesions healed either by fibrous cicatrization or calcareous transformation. Out of one hundred and eighty-nine autopsies, where death had been caused by some other disease, Professor Letulle found the evidences of tuberculous lesions ninety-two times.

Professor von Schrötter had the kindness to send a me report of the Pathological Institute of Vienna, where, in 16,562 autopsies, 789 times tuberculous pulmonary lesions had been found healed by cicatrization of lung tissue, three times the evidences of healed tuberculous laryngitis were found, and nine times the evidence of healed intestinal tuberculous abscesses. A similar report was sent to me by Professor Chiari, of Prague, who found the evidences of healed pulmonary tubercles one hundred and ninety four times in seven hundred and one autopsies, and Dr. F. Parkes Weber, of London, found seventy-nine cases mentioned in the post-mortem records for two years (1890–'91) of Saint Bartholomew's Hospital. Dr. Fürbringer, of the General Hospital in Berlin, estimates the healed lesions of tuberculosis in subjects dead from other diseases at ten per cent., and Professor Renvers, of the Moabit Hospital, at thirty per cent.

I could thus continue to copy the various other reports I collected for my thesis, but I think this suffices.

Carswell, of London, said already in 1838 that pathological anatomy has perhaps never given more decisive proofs of the curability of a disease than it has given for pulmonary consumption.

The objection that these calcified tuberculous centres are perhaps only latent may be justified in some cases, but Kurbow has demonstrated by inoculation of the calcareous masses that they had lost their virulence in a large number of cases.

My eminent teacher, Professor Grancher, of Paris, who has made the pathological process of tuberculosis a lifelong study, says: "We affirm the curability of the tubercle; we affirm that, instead of being a miserable neoplasm incapable of organization, the tubercle tends naturally to fibrous formation"—that is to say, to cicatrization and healing.

I will reproduce here the statistics which I obtained by personal inquiry:

NAMES OF THE SANITARIUMS.	Reported by	Mortality.	CURES.		Ameliorations.	No amelioration.	Average stay.	Number of beds.	Remarks.
			Absolute.	Relative.					
		Per cent.	Per cent.	Per cent.	Per cent.	Per cent.			
Sanitarium of Falkenstein	Dr. Dettweiler.	4 to 4·5	14·0	14·0	45·0	....	90 days.	150	
Sanitarium of Brehmer, at Goerbersdorf.	Dr. Achterman.	7·51	25·0		50·0 to 55·0	....	93 days.	250	No distinction made between absolute and relative cures.
Sanitarium of Dr. Römpler, at Goerbersdorf.	Dr. Römpler.	7·5	25·0 to 27·0		50·0	....	80 days.	110	
Sanitarium of the Countess Püchler, at Goerbersdorf.	Dr. Weicker.	4·0	......		72·0	24·0	......	...	Do not believe in curability in the sense of "*restitutio ad integrum.*"
Sanitarium of Driver, at Reiboldsgrün.	Dr. Wolff.	2·5	......		70·0 to 73·0	....	70 days.	100	
Sanitarium de Turban, at Davos.	Dr. Turban.	4·36	40·0		40·0	....	......	70	
Sanitarium of Hohenhonnef....	Dr. Meissen.	....	14·51	28·91	....	....	80 to 90 days.	80	
Sanitarium of Nordrach	Dr. Walther.	....	30·0		65·0				
Sanitarium of Finland, at Halila (for the poor).	Dr. Gabrilowich.	13·5	36·7		33·0	16·7			
Sanitarium of Ruppertshain....	Dr. Dettweiler and Dr. Nahm.	....	13·0	15·0	42·0	10·0	... ..	...	Institution for the poor.
Sanitarium of Canigou	Dr. Sabourin.	....	43·8						
Adirondack Cottage Hospital...	Dr. Tardeau.	....	......		20·0 to 25·0	30·0 to 35·0	......	...	The patients pay only three fourths of the expense.
Sanitarium of Winyah, North Carolina.	Dr. Von Ruck.	4·0	22·64		42·47				

While the medical literature of all countries shows quite a number of isolated cases of recovery from a pronounced pulmonary tuberculosis, the largest number of cures are reported by the special sanitariums. But to prove clinically the curability of pulmonary phthisis is more difficult, and the statistics might be contested. What one considers cure another would only call amelioration, and a third would not believe in curability at all in the sense of "*restitutio ad integrum.*"

When one considers the great diversity of opinion regarding the meaning of "cured," even among those who were kind enough to give me these reports, one might justly consider such statistics of no scientific value. But they are of great practical value if we interpret them differently. In each of these fifteen sanitariums some three hundred patients are treated annually, which makes four thousand five hundred to five thousand phthisical patients a year, who, if rich, would have distributed their countless bacilli in the various health resorts where they would have sought relief, or, if poor, would have done the same in their families, among their neighbors, and finally, perhaps, have helped to infect their fellow-patients in the large hospitals.

Patients leaving a special sanitarium are no longer a permanent danger to their fellow-men. They have learned practically the hygienic rules which alone can preserve us from contagion, and they will carry them out, knowing that it is as much in their own interest as that of others. The value of such a prophylaxis can hardly be sufficiently appreciated. But the instruction and training thus received have taught the patient much more than the precautions he has to take with his expectoration; he has also learned the causes that may aggravate his condition, the precautions to take—in short, what he ought to do and what not to do.

Even to those who do not believe in the absolute curability of phthisis the great benefit derived by a patient from a more or less prolonged stay in a sanitarium must be evident. As for myself, I think we may accept the frequent possibility of a definite cure of pulmonary phthisis without any fear.

Dettweiler distinguishes between absolutely and relatively cured. He calls absolutely cured the re-establishment of the normal functions of all the organs and the complete disappearance of the bacillus. He calls a patient relatively cured when his general well being has reappeared, in spite of regular coughing spells with some expectoration in the morning.

If I apply this division to my table of statistics, if, instead of the average, I take the lowest number of reported cures, we have seventy per cent. of favorable modification produced by the hygienic and dietetic treatment in the sanitariums. Of these we have fourteen per cent. absolutely cured, fourteen per cent. relatively, and forty-two per cent. ameliorated. Or, in other words, of 4,500 consumptives who have stayed in a sanitarium an average of three months, we have 630 absolutely cured, 630 relatively cured, 1,890 ameliorated, and 1,350 still under treatment or dead.

Where in health resorts or in private practice can such results be shown? But before accepting these statistics one is justified to ask if these reported cures were durable, and if the patients had been kept track of after their departure from the sanitarium.

Dr. Dettweiler published, in 1886, a list of sixty-two cases of complete recovery of from three to nine years' duration. Dr. Wolff, of Reiboldsgrün, formerly at Goerbersdorf, who does not accept the words "absolutely cured," made in 1890 an inquiry of what had become of the patients who had left the Goerbersdorf Sanitarium in 1876 as "relatively cured." Of those from whom he received replies fifty-nine per cent. lived in full enjoyment of their health.

Dr. von Ruck, director of the Winyah Sanitarium, in Asheville, N. C., kindly sent me the following report:

Of 605 patients who had left the sanitarium in the course of three years, and to whom he had written for news, 457 answers were received. Of these, 67 felt absolutely cured, 70 relatively cured, the disease making no progress, 258 felt still ameliorated, and 62 were worse or had died.

Instead of describing the various sanitariums visited, as I have done in my thesis, I will simply enumerate here the most important ones now existing in Europe and the United States: Goerbersdorf (three sanitariums, Brehmer, Römpler, and von Pückler), Falkenstein, Reiboldsgrün, Hohenhonnef, St. Blasien, Nordrach, St. Andreasberg, and Badenweiler, in Germany; Canigou and Touraine, in France; Neu-Schmecks, in Austria; Davos, Arosa, and Leysin, in Switzerland; Tousaasen, in Norway; and Winyah, in the United States. In these institutions the patients pay from $1.50 to $3 a day.

Partly free for the poorer classes, we have in the United States that excellent institution the Adirondack Cottage Hospital, where patients are received at $5 a week, the actual cost being $7. A similar institution has been started here near Falkenstein (Ruppertshain) of which Professor Dettweiler is also director. Another was erected by the city of Bremen at Rehburg in the Hartz, and in Russia (Finland) there is one depending largely on the generosity of the Czar. Of the institutions which are entirely free I will speak later on.

On Climate, Buildings, and Hygienic Management.—I will now proceed to describe the most important factors which constitute the hygienic and dietetic treatment of pulmonary tuberculosis, and will give a *résumé* of what seems to me the best of what I have seen and learned during this last year, exclusively devoted to the visit and study of European sanitariums for consumptives. I will add to this what I think worth mentioning of my personal experience of several years as a young physician in southern California, among the large number of tuberculous patients that flock there every winter from all parts of the United States, and also what I have seen here since I have had the honor to be assistant to Professor Dettweiler.

In my thesis I described an ideal sanitarium wherein was combined all that seemed to me most hygienic and practical. But it would make too long an article to repeat all that description here. I only wish to say that the ideal sanitarium should be erected in a climate where the extremes of temperature are less marked, free from malarial conditions, sufficiently elevated to have a constantly pure and dust-free atmosphere, surrounded by large grounds—pine woods in preference—and protected from cold winds. And I wish to state that I do not believe in the specific action of any climate for the treatment of tuberculosis. There may be places where the hygienic and dietetic treatment can be more easily carried out, but there are no specific climates. I go still further. If I had to choose between sending a phthisical patient to what is usually considered an ideal specific climate, but where he would live as in an ordinary health resort, or keeping the patient at home in a fairly pure atmosphere, and apply the hygienic and dietetic treatment under constant medical supervision, I should choose the latter method of treatment and think the patient would have a far better chance of recovery.

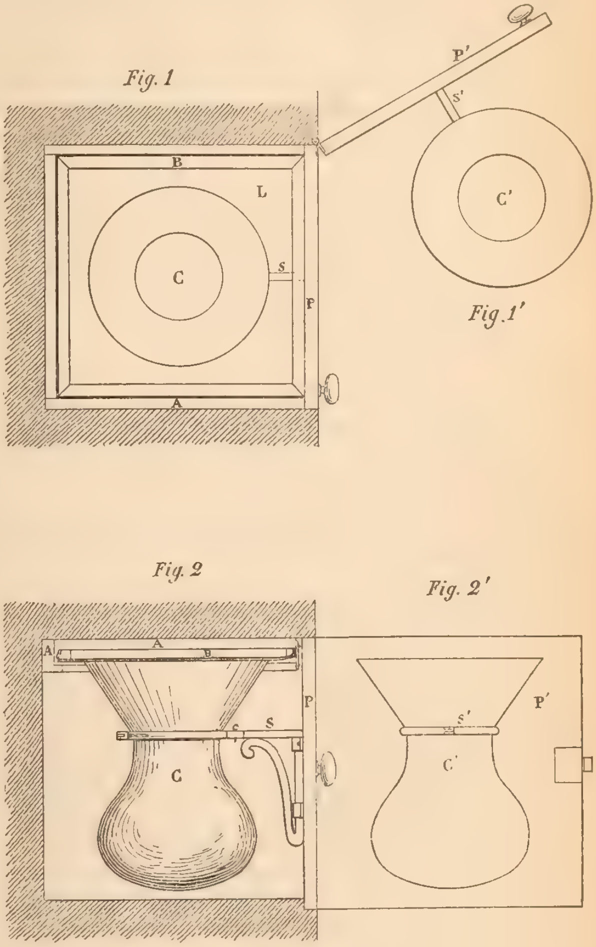
A place where phthisical patients must live should, of course, have all that is best regarding hygiene, comfort, etc., and should above all be built with a view to avoid the accumulation of dust. There should be no square corners in the interior of the building; where floor, walls, and ceiling join the corners should be rounded, that they may be the more easily and completely cleaned and disinfected. To raise dust in a sanitarium for consumptives should be considered criminal. A moist mop should always replace the broom, and oilcloths be used instead of carpets.

In a well-conducted sanitarium the expectoration of tuberculous patients must receive especial attention. As a patient should never be allowed to expectorate except in a spittoon of some sort, these should be provided at all occasions and should be so arranged as to be easily disinfected.

As pocket spittoon, which the patient should always have with him to use whenever he can not conveniently get at the others, I have seen nothing better than Dettweiler's "Hustenfläschchen," of which I give a drawing. It is a pocket flask about four inches long and six inches in its largest circumference, provided with a hermetically closing top and bottom, and so constructed that it can easily be thoroughly cleaned. The touch of a spring causes the top to fly open to receive the intended deposit, and pressure of the lid causes it to close again with a snap.

Dettweiler's pocket spittoon.

The numerous spittoons for general use placed here and there, usually on the floor or on the ground, where, even with the best intentions, the patients sometimes spit to one side, are not a pleasant spectacle either for inmates or visitors. I have seen a great variety of spittoons on my visits to the various sanitariums, but I must confess that I should not wish to adopt any one of them myself. In the ideal sanitarium spittoons should not be seen except when in use. The accompanying figure will give an idea of how this might be accomplished. In the walls of the halls and galleries, at appropriate distances, should be small niches or cupboards, from three to three feet and a half from the floor, and large enough to hold a spittoon eight inches high and about the same diameter. The spittoon, made of colored glass or earthenware, that its contents may be less visible, should rest in a metal ring attached to the door of the niche. The patient desiring to expectorate opens the little door and closes it again after he is through. In the walks and grounds the niches may be replaced by boxes mounted on stands. A third kind of spittoon, for the use of patients in bed or lying on their chairs, consists of small mugs provided with covers.



Spittoon easily disinfected, inclosed in the wall. Fig. 1 and 1', plan; Fig. 2 and 2', elevation; 1 and 2 represent the door closed, 1' and 2' the door open; P, is the door; S, the hinged support; C, the spittoon.

There should always be two sets of spittoons, that none may be lacking during the process of cleaning. The servant charged with doing this should be provided with strong rubber gloves to guard against inoculation during the manipulation of these vessels. The simplest method of disinfection is to put the spittoons with their contents into a large receptacle of boiling water, to which has been added some carbonate of sodium to raise the temperature a few degrees and aid in the thorough cleansing of the spittoons.

There is a possibility of the accumulation of the bacilli in the napkins, on glasses, spoons, forks, etc., for it is not infrequent for the saliva of tuberculous patients to contain the bacillus. If for economical reasons it is not practicable to change the napkins and rinse them in boiling water after each meal, Japanese paper napkins should be substituted, which would be collected and burned after use. All other utensils which might come in contact with the mouth should be put in boiling water or, as is done in Falkenstein, passed through an apparatus especially constructed for sterilizing them each time after they have been used.

Aerotherapeutics and Hydrotherapeutics.—The main point of the treatment is to oblige the patient to live as much as possible in the open air. To this end a long, covered veranda is built in front of the sanitarium. Here the patient spends the greater part of the day lying on a sort of large steamer chair provided with a mattress, where he can be well covered with blankets to keep him warm in cold weather. It is needless to say that a patient, especially one coming from a sick-room in a large city, must only be submitted gradually to the exhilarating influence of a constant sojourn in the open air. But the endurance at which a patient may arrive in this respect is wonderful. Here in Falkenstein the patients remain out of doors on their chairs all the year round from seven to ten hours a day, in spite of rain, fogs, wind, snow, and even with the thermometer at 10° F., and often no sunshine.

Dr. Andvord, of Tonsaasen, Norway, wrote me that he leaves his patients on their chairs, wrapped up in furs, from five to nine hours a day, at a temperature of —13° F.

It is to this prolonged stay in the open air (*Dauerluftkur* of the Germans) that the marvelous results obtained in these institutions may be attributed. And, besides this rest cure in the fresh air, and moderate exercise on the graded walks in the garden, the patient sleeps, of course, in an especially well ventilated room, so that a consumptive in a sanitarium is really always in a pure, fresh atmosphere. During his rest cure on the chair the patient is allowed to read or write, and is made as comfortable as possible. The main point to be attained is an almost complete muscular relaxation, in order to economize and store up strength. The rest cure should alternate with short walks, but the patient should never continue to walk until he is tired, and should never get into a perspiration from exercise. If, however, this should happen in spite of his care, he should return to the sanitarium at once, where he should be rubbed dry and change his garments. At the slightest approach of a chill he should go to bed, ask for a hot drink, and await the visit of the physician. Any possibility of taking cold should be especially guarded against. When the patient is taking his cure on the chair he should always be warmly covered with blankets or lap robes. There is always a nurse attached to the service to see that patients do not become uncovered while asleep.

Short naps after meals are allowed, but they should not exceed ten minutes or so. Consumptives are so apt to perspire when asleep any length of time, and especially when warmly dressed, that this might be the cause of their catching a severe cold. The patients watch over each other alternately in this respect, to see that they do not sleep too long. Patients when on their chairs are also warned never to let the sun shine directly on their heads. Congestion, headache, and other troubles often follow if this precaution is neglected.

Respiratory exercises are not considered of equal importance in all sanitariums, and I am sorry to say that in some they are almost entirely neglected, for I think they are a most important factor in the therapeutics of consumption. But these exercises should not be left to the caprice of the patient. They should be taken systematically and supervised or directed by the physician. A patient who has a temperature of nearly 100° F. should not take any respiratory exercises, nor should one inclined to frequent hæmorrhages make any extraordinary efforts in breathing, but in all other cases they certainly have a most beneficial effect. By the increase of the pulmonary function produced by the exercises, the change of venous into arterial blood (hæmatosis) is more complete. They also develop the respiratory muscles, help to dissolve the mucus, and aid the expectoration. Wherever there are old pleuritic adhesions the patients will complain of rather severe pain during the efforts of exaggerated breathing. The best anodyne is to explain to them that this pain is salutary, being caused by new expansion of the lung tissue.

The patients should be taught to breathe always through the nose, to take a deep inspiration slowly while raising the arms from the sides to a horizontal position, hold the breath for a moment, and lower the arms during the expiration, which should be somewhat more rapid, and followed by a second expiratory effort in order to expel as much as possible of the residual air.

The second exercise is like the first, except that the upward movement of the arms continues until the hands meet above the head. The expiration is likewise made during the downward movement of the arms.

A third exercise is as follows: The patient stretches his arms out in front, the backs of the hands together, as in the first position for swimming. During the inspiration the arms are moved outward, and finally the hands meet behind the back. During the expiration they are brought to the original position.

I should recommend these exercises to the stronger and to the convalescent patients. Feebler ones make simply the first movement while sitting. For the weak patients it is sometimes preferable to have them begin taking the exercises in bed, or on a chair that can be arranged for them to lie in a horizontal position. A cushion is placed under the thorax to realize somewhat Sylvester's position for resuscitating the drowned, and the patient takes a few inspirations and expirations, as above described, but without moving the arms.

As a general rule the breathing exercises should not be taken when the patient is tired, and he should begin gradually, a few at a time, at long intervals. But I repeat that this should be regulated by the physician and not by the patient.

Hydrotherapeutics also plays an important part in the treatment of pulmonary tuberculosis, but here again great prudence should be exercised. The skin of a consumptive, naturally delicate and extremely sensitive to sudden changes of temperature, must be prepared gradually for the application of cold water. At first a vigorous dry friction of the whole body is applied every morning; after a time the friction is made with alcohol, then with half alcohol and half water; next the patient is enveloped in a wet cloth over which the friction is made to aid the reaction; and, finally, when he has gained sufficient strength, he is allowed to go to the douche. This is always directed by one of the physicians, watch in hand.

Besides the general application of cold water, at first with a temperature not lower than 58° F. and descending gradually in successive applications to 45° F., there are local wet packs for intercostal neuralgia or pleuritic pains.

As an external stimulant the cold douche over the body is excellent, but it can only be applied in a relatively small number of cases. For those less strong I should prefer to proceed as follows: The patient sits astride a chair, holding the back with his hands and slightly bending the head, and two or three pitchers of water of the desired temperature are poured over each shoulder. The advantages of this for weak patients are that the temperature of the water can be more easily regulated; with the aid of a tub it can be done in the bedroom, and if the reaction is not sufficient after the rubbing the patient can be put back into the bed which is still warm. This form of ablution, as well as the douche, is usually taken in the morning. The patients strong enough for the douche must take a walk before and after it.

(To be concluded.)

EXPERIENCES WITH PAQUIN'S ANTITUBERCLE SERUM IN THE TREATMENT OF LARYNGEAL TUBERCULOSIS.

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I have been impelled to use Paquin's antitubercle serum in cases of laryngeal tuberculosis by reason of its positive utility in pulmonary tuberculosis. I have during the past six months seen so many patients with pulmonary tuberculosis improve under the use of this serum that, so far as I am concerned, it deserves to be placed with the antitoxine of Behring and Roux as a great advance in modern scientific therapy.

A considerable number of cases of laryngeal tuberculosis have come under my observation during the past six months, giving a good opportunity to test the value of the serum in this disease. While no conclusive report could under any circumstances be made, so recently supervening upon its use, a more or less detailed account of the clinical experiences with the use of the antitubercle serum may be of service to my colleagues in laryngology. Every case of laryngeal tuberculosis that has come under my observation from February 28, 1895, until the present time is here noted, in order that the record may be as complete as possible.

Case I.—J. V., aged thirty years, married, a laster by occupation, consulted me first in May, 1894, being referred by Dr. R. G. Taylor, of St. Louis. His previous history was as follows:

After an exposure to cold and dampness in March, 1894, his complaint first manifested itself, beginning with a chill, night sweats, and pains in the chest. He began rapidly to lose flesh and strength, and in two months he lost twenty pounds. He consulted me in May, 1894, with reference to a nasal affection, which was nothing more serious than a chronic inflammation of the nose resulting from a very greatly deflected sæptum.

As he was evidently a tubercular subject, in view of his general condition, he was advised to leave this climate; and, acting upon the advice, he left at once for Texas. Some six months afterward I received a letter from him stating that he had not improved, but had become worse, and on February 28, 1895, he again presented himself before me in far worse condition than when he left. A new series of symptoms had appeared: his voice had been hoarse for four months, at first unaccompanied by pain, though he complained of a raw feeling about the throat. A month afterward pain in the throat developed, and this had continually increased since that time. With this increase of pain there had been also an increase of difficulty of deglutition and phonation. His family history was fairly good. His mother died after living fifty years in good health, and his father died at forty years of consumption. No other tuberculosis had existed in his family.

Physical examination showed retraction of right side of the chest, dullness on percussion over right apex, with blowing respiration, cogwheel respiration, mucous click, and bronchophony. On the left side there was slight dullness at the apex with prolonged expiration. Examination of the larynx revealed the tissue above the arytænoids and ventricular bands and the arytæno-epiglottic folds considerably infiltrated. There was an ulcer three eighths of an inch long upon the right arytæno-epiglottic fold and a smaller one at the left. Both ulcers were narrow. Both cords were congested, the right being serrated. Many tubercle bacilli were found in his sputum. A very unfavorable prognosis was given, but, inasmuch as he desired to have other opinions upon the subject, he was advised to consult other laryngologists in the city. Dr. Mulhall, after examination, stated that the patient had both throat and lung consumption, that the outlook was serious, with or without the aid of climate; that even with a change of climate the chances of recovery were slight. Dr. Porter stated that the arytænoids were somewhat swollen, the mucous membrane over them being quite red; that the ventricular bands were greatly infiltrated, and on each side were small ulcerations with a characteristic ashy gray color; that the lungs had not progressed so far as is usual in this condition of the throat, but that there was marked dullness at the right apex. Dr. Glasgow stated that he found tubercular infiltration of the upper part of the right lung and also laryngeal phthisis, and advised a dry climate that was not too stimulating, stating that the climate of St. Louis was unfavorable to the arrest of the disease. Dr. Karl von Ruck, Dr. F. L. Sutton, and Dr. G. C. Crandall have at different times examined the patient, and agreed in the diagnosis. The patient was then informed that the Paquin antitubercle serum offered a slender chance if nothing more. He was told that no case of laryngeal tuberculosis had as yet been treated by the remedy, but that considerable good had been accomplished during the previous four months in the treatment of pulmonary tuberculosis. He willingly underwent the treatment, which he soon found was both painless and harmless.

He entered the Rebekah Hospital on March 4th, with a temperature of 100° F., and he was at once subjected to a course of serum treatment, beginning with doses of one cubic centimetre. After a few days the cough, which had been quite harassing, became easier. Some soreness and itching in the axilla and back were experienced, and on account of this the use of the serum was discontinued for a day from time to time, the result of which was the establishment of a tolerance within three or four weeks. The voice soon began to show signs of improvement, becoming quite phonic within six weeks. The pain and dysphagia improved coincidently. Dr. Lemen reported considerable improvement in the condition of the lungs. His weight increased, his appetite improved, and the amelioration of his general condition was very evident. During his stay in the hospital he had occasional relapses, which were readily ascribable to acute or subacute inflammation of the pharynx or larynx, due to some indiscretion. He continued to improve, and on May 6th he left the hospital, having entirely lost the symptoms of pain in the larynx, dysphagia, and night sweats; cough and aphonia greatly bettered. Examination of his larynx showed infiltration greatly reduced, ulcers smaller though quite manifest. The serum was continued, injections of 2·3 to three cubic centimetres being given daily during the following six weeks. He then voluntarily ceased his visits and did not resume treatment for four weeks. When he again presented himself for treatment, it was found that during the interim his cough and aphonia had become worse, and some pain upon swallowing had reappeared. The serum was again used, with results agreeing wholly with his former experience. He accepted a situation and for the first time since the onset of the disease he was able to work. Of late the doses of serum have been increased gradually, until at the present time (September 1st) he takes four cubic centimetres hypodermically every day. The larger doses have produced more rapid improvement and, notwithstanding his work is arduous, he experiences no trouble whatever, barring a huskiness of his voice and a tendency to congestion of the larynx. Dr. Lemen reports that his lungs give no evidence of the presence of abnormal discharge.

Status Præsens.—The entire larynx is of a redder tinge than normal; slight infiltration of arytænoids and arytæno-epiglottic folds and ventricular bands; cords slightly congested; margins of the ventricles thickened; ulcers have entirely disappeared, two small shallow pits, uncovered by deposit, taking their places. For six months I have endeavored to persuade him to permit the use of some application to his larynx, but he has absolutely objected to any laryngeal manipulation, and during the entire course of treatment no local agent has been used on his larynx. Besides the serum no medicinal agent has been administered. During the past five months the temperature has been close to normal, seldom rising to 99°, although previous to the use of the serum the afternoon temperature was always at least 100°. Some tubercle bacilli are still to be found, but they are manifestly diminishing in number. His weight has increased ten pounds since the beginning of the treatment; before he began work his weight was a few pounds greater; he ascribes the reduction to the hot weather and the hard work. His appetite and general condition are better than for years.

CASE II.—Mrs. D., aged thirty-three years, entered the sanitarium on May 5, 1895, giving the following history:

Three years ago she was severely attacked with *grippe*, which was followed by symptoms of pulmonary tuberculosis; these had rapidly become worse, and upon admission her condition appeared altogether hopeless. Emaciation was extreme, dyspnœa was great, night sweats were profuse; anorexia, exceedingly poor assimilation, and diarrhœa united to depress the patient's condition. Some four months previous to her admission she became affected with typical symptoms of laryngeal tuberculosis, pain, dysphagia, odynophonia—all of which had rapidly become worse. The urine was scanty and contained traces of albumin, but no sugar. The temperature varied from 102° or 103° in the evening to 100° in the morning. The lungs showed signs of scattered circumscribed cavities. There was dullness at both apices, with gurgling and cavernous respiration and crackling crepitation in both lungs. The cavities were well defined by a margin of tubular breathing. The cracked-pot sound could not be elicited.

Upon examination, both arytænoids were found pyriform, the inner margin of the right one being the seat of a typical tubercular ulcer as large as a grain of wheat. Both ventricular bands were infiltrated, but the cords showed no evidence of disease. Tubercle bacilli and many other bacteria were found in large numbers.

Although Dr. Paquin, under whose attention the patient placed herself, stated that the antitubercle serum could do no good in such a hopeless case, the patient and her family insisted on a trial. Accordingly she was placed under treatment at once, with results far better than were expected. Though she died on July 6th, sixty-two days after her admission, improvement in the visible morbid processes and in the objective as well as subjective symptoms lent stronger confidence in the efficiency of the serum than had previously been entertained. As early as two weeks after the beginning of the treatment the pain in the throat and the dysphagia began to diminish, and at the same time the appearance of the larynx became more favorable. In a month the improvement in the throat and pulmonary symptoms was much more marked, and the temperature had decreased two or three degrees. The bowel symptoms began now to be more severe, so that it was found impossible to control the diarrhœa. On June 29th she was seized with fainting, and the temperature descended below normal. Shortly afterward she passed some blood *per rectum.* From this time she rapidly became worse, although seemingly unusually sustained (perhaps by the serum). The local treatment consisted of the use of lactic acid and Chappell's solution; still, I must confess that the laryngeal appearances improved far more than was to be expected from these remedies. In this case the subsidiary infection was extreme and therefore the effect of the serum is all the more remarkable.

CASE III.—Mr. F. R., aged thirty-four years, by occupation a farmer, entered the hospital on May 30, 1895, with the following symptoms: Considerable cough; loss of flesh; great difficulty of swallowing; huskiness of voice; night sweats; dyspnœa on exertion; pain in the throat; duration of illness, sixteen years. The throat had been affected for three months. The voice had been husky for some time, but he had never been entirely aphonic. The difficulty of swallowing was very considerable, becoming worse as the disease progressed. He had had only a few hæmorrhages. He was very much debilitated, so much so, in fact, that a cure was not to be hoped for. He denied having had syphilis. Both his parents had died under forty: the father was killed, the mother died of consumption at thirty-three.

The physical signs indicated consolidation in both lungs, softening, and a large cavity at the apex of each lung evidenced by the cracked-pot sound, gurgling, and bronchial breathing; there was a smaller cavity on the right side. Examination revealed nothing abnormal in the nasal cavity beyond a mild chronic inflammation. The palate exhibited the customary anæmia. The larynx showed evidence of disease existing for some time. There had evidently been a destruction of the right cartilage of Santorini, and both ventricular bands and arytæno-epiglottic folds were subject to great infiltration. Only the edges of the vocal cords were visible, on account of the excessive infiltration. There was an ulcer upon the apex of each arytænoid, about three sixteenths of an inch in diameter; both were covered with a dirty grayish deposit. The epiglottis was considerably infiltrated, the upper edge being four times as thick as normal. The entire larynx was constantly bathed with a fairly tenacious yellowish deposit. The sputum showed many tubercle bacilli and cocci in large numbers.

The prognosis in this case, as may be supposed, was not very encouraging, in view of the extreme emaciation, the great destruction of the lung, and the mixed infection accompanying. In spite of this, however, he insisted on treatment, which was at once begun. The temperature ranged from 102° in the evening to 99° in the morning, but soon began to diminish, and at the end of ten days the evening temperature rose to 100°. During the following week the temperature did not rise above 100·4°, and ranged within half a degree of 99°. A week later the temperature was even lower. The larynx exhibited considerable improvement, the epiglottis losing much of its infiltration, and the difficulty of swallowing greatly diminishing. The ulcer over the right arytænoid showed signs of recovery, healing granulations being quite observable, and the dirty grayish deposit becoming scantier.

The local treatment of the larynx consisted of the use of a two-per-cent. spray of menthol and applications of a fifty-per-cent. solution of lactic acid, with occasional applications of a solution of creosote with Chappell's syringe. The patient left the hospital on June 27th, with an improved condition of his larynx and lungs, but without any marked amelioration of his general condition.

Case IV.—Mrs. C. K., aged forty-two years, on July 6, 1895, gave the following history: For three months she had suffered from hoarseness, pain in the throat, dysphagia, a sensation of fullness about the throat, dyspnœa on exertion, night sweats, and cough, which had all increased during this time. Both parents were still living, and one brother had died (of lung trouble).

Physical examination showed consolidation at both apices but no cavity.

Bacilli were found in the sputum in fairly large numbers. The nose, pharynx, and palate were fairly normal; both tonsils atrophied; epiglottis normal; both arytænoids very slightly infiltrated; an ulcer of about the size of a grain of wheat upon the posterior extremity of the right vocal cord. Her general condition was fair, but her weight had been decidedly reduced since the onset of the disease.

The effect of the serum was especially marked upon the ulcer, which has diminished greatly, until at present a rough, pinkish patch marks its former position. Hoarseness, dysphagia, and pain have proportionately disappeared. Her general health has improved and the cough and night sweats have diminished.

Case V.—Mr. J. O., aged thirty-four years, single, presented himself for treatment, July 12, 1895, with the following symptoms: Aphonia, dryness of the throat, pain in the larynx, with dysphagia since September. Considerable nasal discharge, but no throat symptoms other than has been stated. The cough is very bad generally during the day; expectoration muco-purulent; great dyspnœa on exertion; no night sweats. He has had several slight hæmorrhages, and has lost thirty-seven pounds since last September. His father died at thirty-six of pneumonia; his mother is still living, aged fifty-four. His general condition is very poor; he looks almost cachectic. His stomach is the source of much trouble—nausea, vomiting, and lack of assimilative power being rather constant symptoms. He had syphilis in 1888. Tubercle bacilli and other bacteria were found in large numbers in his sputum.

Examination of the Chest.—On inspection, depression of the right apex, with dullness as far down as the fourth intercostal space; greater dullness over the left apex. Many râles were to be heard over both lungs.

Examination shows the nasal cavities wide, the pharynx congested, but the palate pale. Both tonsils are atrophied. Some infiltration over arytænoids; left vocal cords considerably infiltrated, especially on the anterior extremity. Right cord covered with a thin deposit of new tissue near its junction with the thyreoid.

Upon treatment, the pain and dysphagia rapidly diminished, and after three weeks he suffered no longer from these, but the aphonia was but slightly improved. No very great change was observable in his temperature, which had been quite variable and irregular since his admission. During the first week it reached 103°, and was commonly above 102° in the evening. During the last week in August it reached 102° only once, and the evening temperature was generally nearer 100°. General condition much improved.

Case VI.—Mrs. A. G., aged forty years, first examined on July 20, 1895. She has complained since June, 1894, of huskiness, hoarseness, a tickling sensation of the throat, and considerable pain on deglutition, and attributes all her symptoms to exposure at that time. She has lost much flesh and is fairly weak. Cough considerable, expectoration muco-purulent; night sweats slight. She has had only one hæmorrhage—in November, 1894. The pain is mainly localized on the right side of the larynx. Difficulty in swallowing has lately increased so greatly that she is able to swallow only small pieces. Her father is still living, seventy-one years of age, in good health; her mother died at sixty-nine, of abscess of the liver. One brother died of consumption at thirty-four years. Previous history good. Bacilli and other germs were found in the sputum.

Examination of the lungs by Dr. Paquin and Dr. Lemen reveals the following: A fairly large cavity in the right subclavicular space, surrounded by an area of consolidation; left lung consolidated at its upper extremity.

Examination of the Nose and Throat.—Right nasal cavity normal, mucous membrane soggy and anæmic; rhinopharynx subject to chronic congestion; pharynx presents a few granulations. Both tonsils atrophied; palate of good color. Varices in considerable number on the posterior surface of the tongue. Larynx greatly infiltrated, also the arytænoids, arytæno-epiglottic folds, posterior laryngeal wall, and ventricular bands; small ulcers on the inner surface of both arytænoids. The infiltration of this larynx was extreme—in fact, greater than I have heretofore seen; the epiglottis was fairly normal, accounting, perhaps, for the possibility of any deglutition.

The patient's evening temperature on admission was 103°; the next day it was 104·8°; and for some time afterward it ranged about the 104° mark. The morning temperature was normal or just below. The number of respirations was over forty, going down as low as thirty when the temperature was lower.

Serum was used in this case in increasing doses, beginning with 1·6 cubic centimetre; at present four cubic centimetres are used. Submucous injections of Chappell's solution (one drop) were made in the apex of the infiltrated left arytænoid on August 8th, and in a similar position on the right side on August 26th. The solution was injected daily into the larynx, and spraying of a two-per-cent. menthol solution was administered four times a day. Even before this local treatment had time to become in any way effective—in fact, before it was used—the patient began to improve, the temperature declining and the respirations diminishing in frequency. The throat symptoms improved, and the patient felt far more comfortable. On August 9th the right arytænoid became more swollen, and for ten days the condition of the larynx was somewhat worse, and this was due, I think, to the development of a perichondritis. Since that time she has gradually improved, until at the present time the throat gives her far less trouble. It is interesting to note the gradual diminution of temperature. From an evening temperature of 104° it has descended to 102°, showing almost as marked a decrease as in the fourth week of typhoid fever. While the patient's condition is still serious, I think it will be admitted that the six weeks of serum treatment have resulted favorably and that the promise is fairly good.

Case VII.—Mr. H. C. B., of Griggsville, Ill., was referred to me by Dr. Cale on July 23d. For eighteen months more or less hoarseness had been present, unaccompanied by pain until within the past three weeks; he was just beginning to have slight difficulty in swallowing. Cough quite severe, expectoration muco-purulent. He had had night sweats, but they had been absent for some time. The only tuberculosis in his family was in the case of his father, who died at fifty, of pulmonary tuberculosis.

Microscopical examination showed abundant tubercle bacilli.

Examination of the Nose and Throat.—Nose normal; mucous membrane pale; palate and epiglottis anæmic; tonsils atrophied; moderate infiltration of the ventricular bands and arytænoids; posterior wall also infiltrated. This was evidently an early case of laryngeal tuberculosis, and he was at once put under vigorous treatment with antitubercle serum. For his laryngeal affection, menthol spray, inhalation of compound tincture of benzoin, and occasional applications of lactic acid were used. After three weeks of treatment his condition improved considerably, so much so, in fact, that it was deemed wise to send him home for his family physician to continue the serum treatment, as the larynx required slight, if any, attention. The infiltration appeared slightly reduced.

Case VIII.—Miss J. M., aged twenty-eight years, was referred to me by Dr. Fulgham, of Jackson, Miss., with the following history: For five years she had suffered from tuberculosis pulmonalis, which condition had been held fairly in check by judicious climatic therapy. While at times she had been reduced in flesh and strength, she had quite as often regained them. She had had only one hæmorrhage. While her throat had been for years a source of trouble to her, it had been very much worse since January. Since that time there had been great pain in the region of her larynx, which was increased by deglutition, and which showed no tendency to improve. Her voice was not materially affected. There had been no tuberculosis in her family.

The lungs exhibited dullness at the right apex with prolonged, high-pitched expiration, also some dullness on the left side. Tubercle bacilli were present in the sputum.

Both arytænoids were found considerably infiltrated and heightened in color; the infiltration extended downward to the posterior wall of the larynx and forward for some distance along the ventricular bands and the arytæno-epiglottic folds. No ulceration could be distinguished. Both cords appeared normal.

Serum treatment was advised, accompanied with appropriate laryngeal applications. She returned home without submitting to treatment at my hands, her physician with my concurrence deciding to use the serum at home for a time.

Case IX.—E. A., aged thirty-three years, a conductor, entered my division of the Missouri Pacific Hospital on August 23d. For five months he had complained of dysphagia, hoarseness, and pain in the larynx. This latter symptom was a trifle better than it had been. Cough slight. Expectoration muco-purulent; night sweats occasionally; slight hæmorrhage on August 22, 1895; no dyspnœa except on exertion. Since February he had lost twenty-two pounds in weight. He stated that he had had "bronchial trouble" for six years. Five years ago he acquired syphilis, and his present trouble had been ascribed to this by at least one laryngologist.

Tubercle bacilli were found in great numbers in his sputum.

Examination revealed a greatly tumefied epiglottis, the swelling being on the anterior surface. This held the epiglottis well over the larynx, so that an examination of the lower portion was possible only after great patience and care. The posterior wall of the larynx and the tissue above the arytænoids were characteristically pale and infiltrated. No ulceration was discoverable. This patient suffers possibly from both tuberculosis and syphilis of the larynx, but the chances are that the greater source of trouble is the tuberculosis. Iodide of potassium in large doses, which he bore fairly well, considering the condition of his throat, effected no change in the larynx or in the laryngeal symptoms.

During the few days required for examination the dysphagia and pain have increased.

Patient has been put under a vigorous course of serum treatment.

The further progress of these patients will be given in a later paper.

In all the cases, as a matter of course, great attention was paid to dietetic and hygienic indications; in the more desperate cases stimulants were administered; in the more favorable ones, viz., Cases I and IV, nothing in the way of tonics or general remedies was used. Pasteurine tablets were given in all the cases, as they exert an admirable influence in keeping the mouth clean and the breath inoffensive. As was to be expected, the serum did not exhibit so happy an effect in the cases of mixed infection as in the earlier cases where the tubercle bacilli alone were implicated.

Without any allegation of conclusive proof, these unselected cases exhibit a more favorable course than any which have come under my observation previous to my use of serotherapy in laryngeal tuberculosis. Taken as a whole, they suggest a far better prognosis than is generally accorded to the disease. Case I is almost remarkable. Examined by five laryngologists and given a hopeless prognosis by all, the patient represents the strongest proof of the value of the antitubercle serum. Add to this the fact that no local treatment was used, on account of his absolute refusal to permit it, and the proof becomes enhanced. There can be no doubt about the diagnosis, since the opinion of so many laryngologists who examined him demands absolute and unqualified belief. True, some cases of spontaneous recovery have been reported; still, in this case the following facts are to be considered: His improvement was coincident with the use of the serum; his symptomatic amelioration bore a direct relation to the amount of serum used. When the serum was discontinued for four weeks, his cough increased, his voice became less phonic, his difficulty of swallowing returned, and pain and other symptoms reappeared. All these rapidly disappeared when treatment was resumed. More than this, he improved correspondingly more when the doses of serum were increased from two to four cubic centimetres.

Cases II and III are examples of results in hopeless cases. In both the pulmonary tuberculosis had advanced far into the third stage, with extensive laryngeal involvement and mixed infection, and both patients, after great emaciation, accepted sero therapy as a last resort, though they were advised of the utter hopelessness and futility of treatment. In spite of this the condition of both was greatly improved, and not only was the laryngeal tuberculosis, which is so typically progressive in its course, stayed, but the change in the characteristic symptoms and appearance denoted great progress toward resolution.

In view of the results which have thus far been obtained, it is fair to assume that more extended observation and experience will open the field more largely; I even expect that the solution of the vexed problem of the relief and cure of laryngeal tuberculosis may have sero-therapy for its basis, and that other therapeutic agents are purely adjuvant, as they attack the morbid processes without affecting fundamental conditions.

A number of therapeutical possibilities may properly be considered:

I. *Early Tracheotomy.*—It is well known that tracheotomy improves, for a short time, almost all cases of laryngeal tuberculosis, presumably on account of the rest which this operation affords the larynx. The improvement which took place in the larynges in all the cases presented in this paper encourages the hope that tracheotomy will still further augment the chance of recovery and hasten the amelioration. Thus far in none of my cases have I felt warranted in attempting such a radical measure early in the course of the disease, but I feel sure that good may in this way often be accomplished.

II. *Curettement, Arytænoidectomy, and Similar Operations.*—These operations, which have been presented so scientifically by Heryng, Krause, Gouguenheim, Lennox Browne, Gleitsmann, Schmidt, and others, have won a place in the treatment of laryngeal tuberculosis which far surpasses that of any other plan heretofore advocated. Combined with sero-therapy, whereby a generally improved constitutional condition is practically warranted, this plan is by all means inviting. However, it may well happen that closer study will demonstrate that some of the conditions now thought irremediable without curettement may show a special tendency to reduction by the use of serum. Again, the serum itself offers a field for improvement which will enhance the results already attained.

III. *Submucous and Intralaryngeal Injections.*—Chappell, by the use of submucous and intralaryngeal injections of his creosote solutions, has accomplished a great advance beyond all question. I have seen many of his patients and I can testify to the value of his method. The one thing which seemed to be lacking was the uncertainty of securing relief from the accompanying pulmonary affection. This lack I consider is probably supplied by sero-therapy. In my own hands, as shown by the reports of cases, Chappell's method has been attended with fair success. In Case II it was not so favorable, however; the disease had obtained so decided a foothold and the infiltration was so excessive that very little was to be expected. Case III demonstrated the soothing effect of the treatment; in Cases V and VI the patients improved under its use.

A still brighter possibility attaches to the use of submucous injections of antitubercle serum into the affected portions of the larynx. If, as it appears, the serum is antidotal to the poison of the tubercle bacilli and prevents the growth of the micro-organism, there is every reason to expect that this influence will be increased by bringing the agent in close proximity with the morbid process. I have done this in a single instance, too recently to afford any marked results, but sufficient, I consider, to demonstrate its probable harmlessness. In this connection it must not be forgotten that mixed infection may show in the larynx the same prominence that it does in the pulmonary affection; its closer study may modify our views and establish the exact rôle which sero-therapy is in this connection to play in laryngeal tuberculosis.

IV. *Topical Applications, Sprays, etc.*—I consider that these agents are necessary in practically all cases. While the local condition is largely dependent for its origin and development upon the pulmonary affection, it is still a local condition, requiring local treatment quite as much as if it existed upon the skin or at some more accessible point. Lactic acid will always have a place in the treatment of tubercular ulceration of the larynx. Menthol sprays, inhalations of compound tincture of benzoin, iodoform, and remedies of this character will continue of service whatever the ultimate outcome of the serum treatment of laryngeal consumption.

V. *Serum as a Sole Curative Agent.*—The experience in Case I would naturally lead one to infer that the antitubercle serum alone in laryngeal tuberculosis might in at least some cases accomplish a cure. If the diphtheria antitoxic serum can destroy the action of the Klebs-Loeffler bacilli in the pharynx, larynx, and nose, and if the tetano-antitoxine can obviate the local action of the tetanus bacilli, why is it not possible to negative the action of the tubercle bacilli in the larynx by using the serum obtained by immunizing the horse against tuberculosis? True, one need not expect so rapid a result in a chronic disease as in an acute affection; still, it is quite as possible and is to be expected. The results can never be so marked in laryngeal tuberculosis as in pulmonary tuberculosis, on account of the poorer blood and lymph supply of the former as compared with the latter.

In conclusion permit me to state that I entered upon the use of the Paquin antitubercle serum with two antagonistic thoughts uppermost in my mind. In the first place there arose before me the lesson of the past with its dry bones of disproved and discarded remedies, once vaunted to the skies. On the other hand there arose before me the lesson of the future, with its hopes and prospects, hopes amply based upon the improvements already made by the application of bacteriology to surgery and the newer principle of the cure of disease by the use of immunizing serum in other diseases.

Confirmation has been offered by Professor Maragliano, of Genoa, in a paper read before the British Medical Association, in which he professes to have had twenty recoveries from pulmonary tuberculosis treated by antituberculous serum. Marson (*Lancet*, p. 330, No. 3754) reports, out of thirty-eight cases of tetanus treated by various physicians with tetano-antitoxine, twenty-five recoveries. Klein, at the recent meeting of the British Medical Association, said of the diphtheria antitoxine: "Although certain adverse criticisms have been brought forward against its use, one thing, I think, can not be gainsaid—namely, that the scientific basis for the application of antitoxic serum is as firmly founded and as thoroughly established as the use and application of any known drug." Washbourn, at the same meeting, said: "The principle is one that appears to be applicable to all bacterial diseases." I myself expressed a similar opinion in a discussion before the St. Louis Medical Society in January, 1895, stating that it was only a question of time when the active principle would be isolated. Quite important too are the observations of Lemen and Wiggins on the use of the antitubercle serum in the treatment of acute tuberculosis, as well as those of Cale in the treatment of surgical tuberculosis. Again, Dr. Paquin's original and subsequent papers exhibit results in pulmonary tuberculosis unattainable by any other plan of treatment. With these opinions and with my own results thus far, need I apologize because my first hopes and fears have been replaced by a sanguine feeling that sero-therapy offers better possibilities than anything heretofore suggested for the relief and cure of laryngeal tuberculosis?

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THE DETECTION OF THE DIPHTHERIA BACILLUS

BY ITS PECULIAR REACTION TOWARD CERTAIN STAINS.

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An early bacteriological diagnosis of diphtheria is admittedly a great desideratum. Particularly is this true at the present time, where the importance of the use of antitoxine at the earliest stage is recognized, and where, on the other hand, the disinclination to its use in cases of doubtful diagnosis is not unnatural.

The uncertainty of a direct cover-glass examination as compared with the culture method has led, it seems to me, to a more slighting estimate of the former than the facts justify, and I am convinced that in the hands of a competent observer better results may be obtained than is generally supposed. The convenience and quickness with which the diagnosis can be made in suitable cases would recommend its general employment, even if the percentage of positive diagnoses were smaller than is generally admitted. Some observations I have made during the last few months in a large number of examinations seem calculated to increase this percentage and the certainty of the method not inconsiderably. The observations are in reference to certain morphological peculiarities of the Loeffler bacillus and its behavior toward certain stains.

If a cover glass, prepared in the usual way from a serum culture not older than twenty-four hours, is treated for a few seconds only with a one-per-cent. solution of methyl green and then immediately rinsed and examined in water, very often the following will be observed: The majority of the bacilli will be stained faintly green and contain at both ends a well-defined round body much more deeply stained and of a distinctly reddish color. This is particularly striking in cultures containing mainly the shorter and uncharacteristic forms. The effect may be still further increased by the addition of other colors to the methyl green for the purpose of contrast and increased penetration. Thus a combination of dahlia with the methyl green is very effective. I have found the following mixture most successful: Five parts of a fresh one-per-cent. solution of methyl green, one part of fresh one-per-cent. dahlia, and four parts of water. If either of the colors predominates too decidedly, add cautiously from the other color until the right effect is obtained. The mixture improves with age. Only a second is required for staining, otherwise the stain is too intense and there is no differentiation. Much the same results may be obtained from a mixture of fifteen parts of one-per-cent. solution of methyl green and one part of carbol fuchsine, but the solution is not permanent. The bacilli stained by the dahlia solution seem slightly larger than those stained by the fuchsin solution, but in each case if the stain is successful the bodies described stand out in sharp contrast. This action of the diphtheria bacilli at a certain stage in their growth I regard as very characteristic. At least, none of the bacteria ordinarily found in the mouth act in this way. By smearing a piece of the membrane on the cover glass, drying and flaming in the usual way, and staining one or two seconds, the diphtheria bacilli, or certain of them, will present the appearance described above. Wherever I have found such forms, even if only two or three, in the direct cover-glass examination, the cultures have developed diphtheria bacilli without an exception, so that I have come to regard this reaction as of the greatest diagnostic importance. It is further of great use in detecting a few diphtheria bacilli in cultures where the number present was originally so small that the growth of other bacteria would cause them to be overlooked in the routine examination of the serum tubes. This is of special importance in the examination of secondaries.

It may be remarked that the faintly stained bacteria often require a good lens and a trained eye for their detection. They may usually be rendered more apparent by two or three seconds' immersion in aqueous Bismarck brown or methylene blue. By staining a little more deeply with the dahlia-methyl green, and then with the blue, an appearance may be obtained almost reproducing in miniature the appearance of the red-stained spores in the blue anthrax bacilli. The Bismarck brown, however, is more delicate and safer.

These bodies are quite different from the discs and striations of the ordinary preparations. As to their nature, much can not as yet be stated. They seem to be the same as those described by Babes, Ernst, and Neisser. The ease with which they can be put in evidence and their peculiar behavior toward methyl green seem to have escaped observers hitherto. At least I find no mention of them in Günther, Heim, Lenhartz, and noticeably in Escherich's latest publications. It is evident to me that in spite of the superficial resemblance of these bodies to spores they have nothing in common, and they are not the result of degenerative changes. The fact that they are present in greater numbers and more characteristic, in fresh cultures, and more difficult to produce in older cultures, makes this quite evident. I incline to the view of Ernst in attributing a nuclear nature to them. Possibly they represent a division of the nuclear substance preliminary to the division of the bacilli. In support of their nuclear nature may be mentioned the fact that they stain with hæmatoxylin. By staining deeply with P. Meyer's hæmalum and then with very dilute carbol fuchsine a striking picture may be obtained.

Probably the safest method is to stain with the dahlia-methyl green and then with a dilute aqueous solution of Bismarck brown until the bacilli are stained either faintly reddish from the dahlia remaining in them, or faintly brown. The method recommended originally by Ernst, slightly modified, will often give results. In this case, one stains as usual with methylene blue (Loeffler's), and then for a few seconds with Bismarck brown. Whichever method is used, however, the important part, it seems to me, is the ease with which these singular bodies may be brought out, and the importance they thus acquire in diagnosis.

THE THERAPEUTICS OF OLEO-CREOSOTE AND CREOSOTE CARBONATE.*

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ANN ARBOR, MICH.

My attention was first directed to the value of creosote in certain pulmonary lesions by the results published by Flint, of New York, and also those of my colleague Dr. Georg, of Ann Arbor, the reports of these gentlemen appearing in the early part of 1889. Previous to this date the remedy had found very little favor outside of Germany and France, where Sommerbrodt, Rosenthal, Bouchard, and Gimbert had produced quite an array of clinical evidence in support of the value of the remedy in the treatment of phthisis. After reading Professor Flint's report I began to treat my phthisical patients by this author's so-called continuous inhalation method. My results at first were good; the patients gained in weight, cough and expectoration became less, and the night sweats in some cases ceased entirely. Parenthetically, I might say that pure beechwood creosote was used, no other form being known at that time. The remedy was also given internally at the same time that the inhalation treatment was followed. But as a rule the medicine gave me trouble on account of its irritant effects and the distressing nauseating eructations following its exhibition. And then, in cases where creosote was at all well borne, the kidneys had to be kept under close surveillance lest irreparable damage be done here. It was ascertained that most patients could bear the remedy in small doses only; that the inhalation method was absolutely worthless. These facts, with the dictum of Sommerbrodt—"the more creosote, the better the results"—constantly before us, offered many perplexing features in the pursuit of the treatment. The culture experiments of Koch and Guttmann proved that very weak solutions of creosote arrested the growth of tubercle bacilli. While this was established, yet the fact was also patent that creosote could work serious results upon the patient as well; in other words, the fact of the intense corrosive toxicity of this agent. However, I continued to prescribe creosote as occasion presented, sometimes with indifferent results; upon the whole, however, the results were beneficial to the patient. The doses rarely exceeded eight drops, in elastic capsule, three times a day. I had learned to look upon creosote as a stomachic, if nothing more, since by its germicidal action it arrested gastric and intestinal fermentation; a better digestion resulted, which in turn fortified the patient against the advance of the malady.

With the dictum of Sommerbrodt, on the one hand, and the fact of the toxicity of creosote on the other, it became apparent to all observers that in order to bring this agent to its highest efficiency in the treatment of pulmonary lesions it must come in a form such as would permit of a maximum dose with a minimum toxicity, and the remedy must also be in such form as that it shall undergo little or no change in the patient's stomach. For some time creosote was given in clysters, in suppositories, hypodermically, in capsules, and in keratin-coated pills; but nevertheless it was the same irritant, noxious creosote. But these various methods doubtless all worked together toward the production of something better. The problem was brought to the notice of the chemists, and here it received its final solution. Von Hayden demonstrated the fact that the phenol group could be combined with the organic acids, and that when so combined the corrosive toxicity of phenol was destroyed while its germicidal power was still intact. Hence we find phenol carbonate or creosote carbonate, a chemical combination containing ninety-two per cent. of pure creosote, administered to the patient in teaspoonful doses, if necessary, without the slightest deleterious results. Likewise we have phenol oleate, or oleo-creosote, containing thirty-three per cent. of pure creosote, which, if given in similar large doses, will yield the same benign results so far as injury to the patient is concerned. Now, when we remember that the maximum dose of pure phenol is only eight grains, I think we can readily see the immense advantage therapeutically when a remedy with the same power as the other can be brought to bear upon the disease processes with safety in such large dosage. Experiments show that these substances are eliminated mainly by the kidneys, but they are also present in the pulmonary exhalations. Phenol oleate and carbonate are distributed through the entire length of the small intestine. For this reason it is highly important that in all cases of tuberculosis accompanied with diarrhœal discharge the flux be placed under control, otherwise the remedy will pass through instead of being absorbed; therefore their decomposition and absorption are also much more rapid and elaborate than with the other so-called intestinal antiseptics, like salol, beta-naphthol, etc., whose decomposition takes place entirely in the upper end of the small intestine. These facts point to the value of creosote oleate and carbonate in the treatment of typhoid fever and other diseases in which the intestinal lesions are due to the operations of bacterial life. In the treatment of phthisis pulmonalis the author's experience with these remedies is limited to nine cases, all occurring during the past year. Of course, this time is much too short to prove ultimate results. Six of these were in the beginning stages. In these, creosote carbonate has thus far proved of great value. In two cases of more advanced phthisis in which the remedy was administered, the result thus far is not so flattering. While the patients are not losing ground, yet the gain is also not apparent, and what the final outcome will be must be left for time to demonstrate.

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* Read before the Mississippi Valley Medical Association at its twenty-first annual meeting.

In one case of chronic fibroid phthisis in the last stages the remedy was of no value whatever. The author is therefore led to remark that with creosote carbonate and oleate, as with all other remedies against phthisis, in order to be of value the diagnosis *must* be made early. I must not fail to mention that in all these cases, the most advanced as well as the recent, the remedy produced no unpleasant results, and was readily taken even in large doses.

In the treatment of bronchitis my experience with these remedies has been much larger than in phthisis, and the results have been uniformly favorable. I call to mind cases of chronic bronchitis of five and six years' standing in which oleo-creosote produced marked improvement after other treatment had apparently failed. A case of catarrhal bronchitis in a child a year old, whose mother died of phthisis, occurs to me, in which creosote oleate produced most charming results. Both of these cases occurred in the practice of Dr. W. C. Stevens, of Detroit, Mich. The patients being relatives of mine, I am in a position to say that the treatment applied by Dr. Stevens was the most careful and scientific, and yet the bronchitis did not abate. While in attendance upon the funeral of the mother, my attention was called to the condition of the baby, and certainly the indications were that the child's course would be speedily that of its mother. Dr. Stevens being present, it was decided as a last resort to put the patient upon oleo-creosote in Loffoden cod liver oil in the proportion of one to sixteen, a half teaspoonful to be given after nourishment, four times a day. The patient had taken cod-liver oil previously with no apparent benefit, yet under the oleo-creosote combination improvement was soon apparent, and has been uninterrupted, until at the present time the child is free of all bronchial irritation. If Dr. Stevens is in the audience I am sure he will bear me out in the remarks made upon this case. I have reported this case somewhat in detail simply as a picture of similar results obtained in many similar cases, the complete clinical history of which I do not feel warranted in giving, since it would infringe upon valuable time which belongs to other gentlemen on the programme. In the treatment of bronchitis and gastric and intestinal disorders my preference is the oleo creosote, while in the treatment of tuberculosis creosote carbonate is indicated, because the percentage of creosote is much greater in the carbonate than in the oleate. In fœtid bronchitis the oleate must be given in large doses. The mode of administration of the remedies will depend largely upon the custom of the practitioner. In Germany stewed fruit is the most common vehicle. In combination with hot milk is an excellent method of administration. The remedies are also frequently given in emulsion. I usually employ pure glycerin as the vehicle. Since the taste is not unpleasant, many patients prefer to take the remedies pure. They can be given in cod-liver oil, which will add to the value of the treatment, since in cod-liver oil we have a food, and therefore a tissue builder in addition, provided always that the oil is well tolerated by the patient's stomach.

Finally, my experience with these remedies may be summed up in the following conclusions:

1. The dose is practically unlimited so far as toxicity is concerned, but it is preferable to begin with small doses—two to three drops after eating—and increase until the desired result is obtained.
2. To be of value in tuberculosis, a clinical diagnosis at least *must be made early*.
3. While these agents are distinctly germicidal, yet they also serve as tissue builders.
4. Creosote carbonate and oleate have the power of increasing the number of red blood-corpuscles, and they also increase the percentage of hæmoglobin in the blood.

The author can not but feel that this paper has fallen far short of a successful exposition of the great subject of the therapeutics of tuberculosis. Other methods of coping with this grave condition are receiving the approval of the profession; but time alone can work out results, and what the ultimate successful remedy against tubercular disease shall be is not yet known.

If I may be permitted a concluding statement, I would say that whatever the remedy and whatever the modes and methods, success will be grounded in treatment that is germicidal, tissue-building, blood-elaborative, reconstructive.

The New York Hospital Training School for Nurses.—On Wednesday evening, the 2d inst., a reception was held by the fifteen ladies of the graduating class in the administration building of the hospital.

The Health of Dr. Horace T. Hanks.—Dr. Hanks informs us that he has quite recovered from his recent illness and has resumed his professional work.

The Richmond Academy of Medicine and Surgery.—At the next meeting, on Tuesday evening, the 8th inst., it is announced, Dr. J. A. White will lead in a discussion on goître.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, OCTOBER 5, 1895.

THE ANTITOXINE TREATMENT OF DIPHTHERIA.

We are far from considering the question of the value of the antitoxine treatment of diphtheria as still an open one, and in this, we feel sure, the great body of the profession is with us. Nevertheless, it is well to have a decided expression to that effect from so logical and judicial-minded a man as Dr. Welch, of Baltimore. Dr. Welch made the antitoxine treatment of diphtheria the subject of an address at the last meeting of the Association of American Physicians, in May. He has since elaborated the address, and it appears in full in the July-August number of the *Bulletin of the Johns Hopkins Hospital*, of which double number it occupies a great portion of the entire space. Certainly that amount of space could not have been turned to better account.

According to Professor Welch, the antitoxine is most strikingly beneficial in progressive fibrinous diphtheria and especially in the prevention and cure of laryngeal diphtheria, but in septic diphtheria it is of little avail. It may produce unpleasant effects, but these do not involve danger to the patient, says Dr. Welch, and they are in all probability referable to the serum as such and not to the healing, so-called antitoxic, substance contained in the serum. The serum from some horses, he thinks, is more likely to cause exanthems than that from others, and there may be individual idiosyncrasies favoring their occurrence. They may be localized in the neighborhood of the seat of injection or extend from that over the greater part of the body, or make their first appearance at a distance from the point of injection. Often without noticeable fever they may be accompanied by considerable elevation of temperature and by pain and swelling in the joints. A rarer but severer form of serum exanthem resembles erythema multiforme, and when this is accompanied, as it may be, by high fever and by severe pain in the bones and joints with swelling of the joints, the condition of the patient may really seem serious, but these patients recover. Some have attributed a petechial eruption to injection of the serum, but this may occur in diphtheria without serum treatment.

There have been a few cases reported, says Dr. Welch, in which the writers, without any satisfactory evidence whatever, have referred the death of the patient to the use of the serum. The essential harmlessness of the serum, he adds, has been demonstrated by over a hundred thousand injections, and if future investigations should show that through some idiosyncrasy on the part of the patient death ever was attributable to the injection of the serum, this would probably count for about as much as the rare deaths from the use of ether or chloroform.

The principal conclusion which he would draw is that a study of the results of the treatment of over seven thousand cases of diphtheria with antitoxine demonstrates beyond all reasonable doubt that the serum is a specific curative agent in diphtheria, and that its use surpasses that of all other known means of treating the disease; consequently it is the physician's duty to use it. The results lately reported are more favorable, and further improvement may be expected as we come to a clearer understanding of the mode in which the serum acts. Perhaps the methods of its preparation and preservation may be bettered, and possibly the active principle freed from undesirable substances if not actually separated.

Professor Welch closes as follows: "The discovery of the healing serum is entirely the result of laboratory work. It is an outcome of the studies of immunity. In no sense was the discovery an accidental one. Every step leading to it can be traced, and every step was taken with a definite purpose and to solve a definite problem. These studies and the resulting discoveries mark an epoch in the history of medicine. It should be forcibly brought home to those whose philozoic sentiments outweigh sentiments of true philanthropy, that these discoveries which have led to the saving of untold thousands of human lives have been gained by the sacrifice of the lives of thousands of animals, and by no possibility could have been made without experimentation upon animals."

MINOR PARAGRAPHS.

THE THERAPEUTICAL INDUCTION OF PERITONEAL ADHESION.

Operative surgeons, we take it, have not generally felt an abiding confidence in the efficacy of adhesion artificially induced between one peritoneal surface and another for the purpose of permanently maintaining an organ in a certain position or attitude, but we do not recall having seen this lack of confidence so pointedly expressed in print as it is in Dr. Fowler's article entitled A New Method of Hysterorrhaphy: Ventral Fixation by Means of the Detached and Replaced Urachus, which we publish in this issue of the *Journal*. We suppose it must be conceded that peritoneal adhesions, however troublesome they may prove when they have their origin in pathological processes, are but little to be depended on when they are established for therapeutical purposes. The use made of the urachus by Dr. Fowler as an improvement, certainly a highly ingenious device, may, it is to be hoped, prove more trustworthy.

ARGON AND HELIUM IN MINERAL WATERS.

It seems that the Spanish physicians have for a long time recognized the fact that certain effervescent waters of the Pyrenees give off nitrogen, and these waters they have grouped under the name of *azoades*. At a recent meeting of the *Académie des sciences* (*Union médicale*, September 21, 1895) M. Bouchard read a note in which he stated that in gas collected from the Raillière spring at Cauterets he had found spectroscopic indications of the presence of both argon and helium. It is to be supposed, we should say, that this has no further significance than that of showing the atmospheric origin of the gas contained in the waters.

LOUIS PASTEUR.

M. Pasteur, whose death has occurred during the week, will be remembered with honor for many generations to come, not merely as a chemist, but as a philosopher, comparable perhaps to Franklin. It is impossible, dissent as we may from some of his conclusions, to overestimate Pasteur's services to medicine and to mankind. It is fitting that his funeral has been given a governmental character. France has lost a man of the first magnitude, and all civilized peoples will mourn with her.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 1, 1895:

DISEASES.	Week ending Sept. 24.		Week ending Oct. 1.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	33	6	29	7
Scarlet fever	19	1	28	2
Cerebro-spinal meningitis	4	5	3	1
Measles	35	5	63	3
Diphtheria	109	16	138	23
Small-pox	0	0	1	0
Tuberculosis	54	132	128	100

Advances in School Hygiene.—It is announced that the New York Board of Health has approved of certain recommendations which its bacteriologist, Dr. Biggs, has suggested that it should make to the Board of Education—among them the following:

1. The use of slates, slate pencils, and sponges shall be discontinued in all the public schools.
2. According to requirement pupils shall be supplied with pencils and penholders, each pupil to retain those received in a box provided for the purpose, such box to be marked with the pupil's name. Pencils and penholders shall not be transferred from one pupil to another without suitable disinfection.
3. All school property left in the school building by a child sick with any contagious disease, and all such property found in an apartment occupied by a family in which a case of small-pox, typhus fever, diphtheria, scarlet fever, or measles has occurred, shall be taken by the health department for disinfection or destruction.
4. Books which are taken home by pupils shall be covered regularly once each month with brown manilla paper.
5. Places for drinking water on the ground floors of the school buildings shall be discontinued, and a covered pitcher provided for each class room, in which fresh water shall be placed before every session. A numbered cup, to be kept in the class room, shall be issued to each pupil. No interchange of cups shall be allowed.

The Harlem Medical Association of the City of New York held its first regular meeting on Wednesday, October 2d. The order for the evening was to be the presentation of patients, reports of cases, demonstration of specimens, and a paper entitled The Abortive Treatment of Gonorrhœa by the General Practitioner, by Dr. Ferdinand C. Valentine.

Literary Work in the Navy.—We are glad to learn, says the *Army and Navy Journal*, that some of our naval officers do good work in addition to their routine service. Surgeon F. B. Stephenson has lately finished translations from several Russian publications about the gypsy moth for the State Board of Agriculture of Massachusetts. During a recent cruise on the Asiatic station Dr. Stephenson made use of his opportunities to advantage in gaining a practical knowledge of the language of this nation, so rapidly growing in strength and influence.

The New McLean Hospital for the Insane, under the management of the trustees of the Massachusetts General Hospital, of Boston, was inspected by an invited party of physicians, asylum officers, and other officials, together with ladies, on Tuesday, the 1st inst. The new hospital is situated in Waverley.

The Index Medicus.—Dr. George Thomas Jackson informs us that he has secured the following additional subscribers since our last announcement was made:

Dr. I. Adler,
Dr. E. L. Keyes,
Dr. C. A. Herter,
Dr. F. Delafield,
New York.

The New York Polyclinic.—Dr. George R. Fowler, of Brooklyn, has been elected professor of general surgery.

Changes of Address.—Dr. Edwin Marion Cox, to No. 8 West Thirty-third Street, New York; Dr. Alexander Duane, to No. 49 East Thirtieth Street, New York; Dr. Charles Good, to No. 170 West Seventy-eighth Street, New York; Dr. Smith Ely Jelliffe, to No. 231 West Seventy-first Street, New York; Dr. Henry Ling Taylor, to No. 117 West Fifty-fifth Street, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 15 to September 28, 1895:*

Cronkhite, Henry M., Major and Surgeon, will report in person to the president of the Army Retiring Board, to convene at Chicago, Ill., on October 8, 1895, at such time as he may designate, for examination for retirement.

Straub, Paul F., First Lieutenant and Assistant Surgeon, San Carlos, Arizona, is granted leave of absence for one month, to take effect on or about October 6, 1895.

Ewen, Clarence, Major and Surgeon, now on sick leave of absence, is relieved from further duty at Fort Walla Walla, Washington, and ordered to Fort Bliss, Texas, for duty, relieving Taylor, Blair D., Major and Surgeon. Major Taylor, on being thus relieved, is ordered to Fort McPherson, Georgia, for duty at that post.

The following named officers are detailed to represent the Medical Department of the Army as delegates at the annual meeting of the American Public Health Association, to be held at Denver, Col., October 1 to 4, 1895: Woodhull, Alfred A., Lieutenant Colonel and Deputy Surgeon General; De Witt, Calvin, Major and Surgeon; and Turrill, Henry S., Major and Surgeon.

Girard, Joseph B., Major and Surgeon, is granted leave of absence for one month, to take effect about the 5th proximo.

Lippincott, Henry, Major and Surgeon, is relieved from duty at Fort Adams, Rhode Island, and ordered to Fort Sheridan, Illinois, for duty, relieving Girard, Alfred C., Major and Surgeon. Major Girard, on being thus relieved, is ordered to Fort Douglas, Utah, for duty, relieving Heizmann, Charles L., Major and Surgeon. Major Heizmann, on being thus relieved, is ordered to Fort Adams, Rhode Island, for duty.

Johnson, Richard W., Captain and Assistant Surgeon, will be relieved from duty at Fort Huachuca, Arizona, upon the arrival there of Wakeman, William J., Captain and Assistant Surgeon, and ordered to Fort Logan, Colorado, for duty.

Worthington, James C., Major and Surgeon, is granted leave of absence for three months on surgeon's certificate of disability.

A board of medical officers, to consist of Alden, Charles H., Colonel and Assistant Surgeon General; Forwood, William H., Lieutenant Colonel and Deputy Surgeon General; Huntington, David L., Lieutenant Colonel and Deputy Surgeon General; Smart, Charles, Major and Surgeon, and Reed, Walter, Major and Surgeon, is constituted to meet at the Army Medical Museum Building in this city on Tuesday, October 1, 1895, at 10 a.m., for the examination of candidates for admission to the Medical Corps of the Army.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending September 28, 1895:*

Guest, M. S., Assistant Surgeon. Detached from the Minnesota and ordered to the Vermont.

Persons, R. C., Surgeon. Detached from the Minnesota, ordered home, and placed on waiting orders.

De Valin, C. M., Assistant Surgeon. Detached from the Vermont, ordered home, and granted six months' leave. September 16th.

Bagg, C. P., Assistant Surgeon. Ordered to the Vermont.

Bertolette, D. N., Surgeon. Ordered home and placed on waiting orders when the Atlanta goes out of commission.

Bryant, P. H., Passed Assistant Surgeon. Detached from the Baltimore and ordered to duty on the Petrel. September 19th.

Arnold, W. F., Passed Assistant Surgeon. Detached from the Petrel and ordered to special duty in investigating the plague in China and cholera in Japan.

Bertolette, D. N., Surgeon. Detached from the U. S. Steamer Atlanta and ordered to duty on the U. S. Steamer Minneapolis.

Dickinson, D., Surgeon. Detached from the U. S. Steamer Minneapolis and ordered to examination for promotion.

Society Meetings for the Coming Week:

Monday, *October 7th:* New York Academy of Sciences (Section in Biology); New York Medico-surgical Society; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Philadelphia Academy of Surgery; Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society; Monmouth, N. J., County Medical Society (Freehold).

Tuesday, *October 8th:* Tri-State Medical Society of Alabama, Georgia, and Tennessee (first day—Chattanooga); East Texas Medical Association (first day—Tyler); New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Medical Societies of the Counties of Albany (semi-annual), Chenango (tri-annual), Greene (semi-annual—Cairo), Jefferson (quarterly—Watertown), Oneida (semi-annual—Rome), Ontario (quarterly), Schoharie (semi-annual), Rensselaer, and Tioga (Owego), N. Y.; Medical Association of Northern New York (annual—Malone); Newark (private) and Trenton, N. J., Medical Associations; Bergen and Cumberland (semi-annual), N. J., Medical Societies; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Richmond, Va., Academy of Medicine and Surgery; Practitioners' Club, Richmond, Ky.; Litchfield, Conn., Medical Society (annual).

Wednesday, *October 9th:* Tri-State Medical Society of Alabama, Georgia, and Tennessee (second day); East Texas Medical Association (second day); New York Pathological Society; American Microscopical Society of the City of New York; Tri-States Medical Association (Port Jervis); Medical Society of the County of Albany; Philadelphia County Medical Society; Franklin (quarterly—Greenfield) and Hampshire (quarterly—Northampton), Mass., District Medical Societies; Middlesex, Mass., South District Medical Society (Cambridge); Plymouth, Mass., District Medical Society (special); Kansas City, Mo., Ophthalmological and Otological Society.

Thursday, *October 10th:* Vermont State Medical Society (first day—Burlington); Army and Navy Medical Association (Chicago); Tri-State Medical Society of Alabama, Georgia, and Tennessee (third day); Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; New York Laryngological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *October 11th:* Vermont State Medical Society (second day); New York Academy of Medicine (Section in Neurology); Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; College of Physicians of Philadelphia (Section in Surgery); Cleveland, O., Medical Society; Medical Society of the Town of Saugerties, N. Y. (anniversary).

Saturday, *October 12th:* Obstetrical Society of Boston (private); Worcester, Mass., North District Medical Society.

Births, Marriages, and Deaths.

Born.

Silver.—In New York, on Saturday, September 28th, to Dr. and Mrs. Lewis Mann Silver, a daughter.

Married.

Bertholf—Tuthill.—In Brooklyn, on Thursday, September 26th, Dr. Henry Winthrop Bertholf, of Yonkers, and Miss Ella M. Tuthill, daughter of Dr. James Y. Tuthill.

Bourgeois—Davis.—In Morgan City, La., on Thursday, September 19th, Dr. S. J. Bourgeois and Miss Gertrude A. Davis.

McDaniel—Gibbs.—In San Antonio, Tex., on Wednesday, October 2d, Dr. Alfred C. McDaniel and Miss Virgilia Gibbs.

McKinley—Waters.—In Waukon, Iowa, on Tuesday, September 17th, Dr. J. Ambrose McKinley, of Chicago, and Miss Jennie Mae Waters.

Putnam—Evans.—In Malden, Mass., on Monday, September 16th, Dr. George L. Putnam and Miss Annie Elizabeth Evans.

Died.

Crane.—In Foxboro, Mass., on Saturday, September 28th, Dr. George W. Crane, aged twenty-seven years.

IZLAR.—In Ocala, Fla., on Saturday, August 24th, Mrs. Fernanda A. Izlar, wife of Dr. R. P. Izlar.

SIEGEL.—In Brooklyn, on Tuesday, September 17th, of typhoid fever, Mrs. Louisa F. Siegel, a third-year medical student and the wife of Dr. Ferdinand Siegel, aged thirty-four years, three months, and twelve days.

SINGER.—In Galveston, Tex., on Wednesday, September 25th, Dr. Michael Singer, aged forty-two years.

TIFFANY.—In Binghamton, N. Y., on Wednesday, October 2d, Dr. Charles W. Tiffany.

WELTY.—In Brooklyn, on Sunday, September 1st, Mrs. Sarah Welty, wife of Dr. George W. Welty.

Letters to the Editor.

THE IMMEDIATE PRESERVATION OF POST-MORTEM SPECIMENS.

255 WEST EIGHTY-THIRD STREET, NEW YORK, *September 30, 1895.*

To the Editor of the New York Medical Journal:

SIR: One of the chief difficulties in obtaining a clear idea of the changes which occur during inflammation of the gastro-intestinal canal, and consequently of the causes of the same, is the rapid post-mortem change, due in part to the bacterial life and probably also to the normal digestive juices present.

Even when the autopsy is very promptly made, the tissues are so delicate that it is with difficulty that a successful preparation for microscopic examination is obtained.

With the object of overcoming these difficulties and of perfecting a method which from its simplicity would not require that the pathologist should be on hand to conduct or oversee the process of preservation, these experiments were conducted in the laboratory of the College of Physicians and Surgeons, of New York, during the spring of 1895. Five experiments were made, the procedure differing in each case.

Experiments one and two differ only in the preservative used and were made as follows: A rabbit was killed and immediately suspended by its hind legs from a hook in the wall. A cannula was then tied into the rectum and the preservative injected under a pressure of four feet gravity, the pressure being kept up for twenty-four hours. In one case Müller's fluid, in the other Müller's fluid with one per cent. of corrosive sublimate, was used. At the end of the twenty-four hours post-mortems were made with similar results in each. The subcutaneous tissue was greatly infiltrated with the preservative, causing an œdema of an inch in depth over the lower part of the abdomen. The peritonæum contained little fluid; the large and small intestines were well distended; the stomach contained food only.

Upon microscopical examination, the subcutaneous tissue was found beautifully preserved. The intestinal walls, however, were evidently suffering from the great pressure used.

Experiment three was performed in the same way, except that two-per-cent. formalin was injected at a pressure of from eight to ten inches, the pressure remaining constant for twenty-four hours, when an autopsy was made.

There was now no subcutaneous œdema. The epithelial cells and connective-tissue cells of both the large and small intestine were found beautifully preserved. The pressure, however, had caused infiltration of the connective tissue of the intestinal wall, so that the coats were much separated, the connective-tissue cells isolated in the spaces so formed being very fine.

Experiment number four.—In this case a dog was used, as the intestinal wall has in this animal more nearly the thickness of the human intestinal wall. The animal, having been killed, was immediately laid upon its side and five-per-cent. formalin was injected into the peritoneal cavity by means of a large hollow needle, the pressure being about twenty inches, and continuing for twenty-four hours, when an autopsy was made.

The large and small intestines were found bathed in the preservative, and were bleached, shrunken, and hard. Upon section and microscopical examination of the gut, no œdema appeared. The two muscular walls were in good condition, the connective tissue, the muscularis, the mucosa, and the glands were found well preserved. The apices of the villi, however, were absent (decomposed?), showing the probable limit of penetration of the preservative.

Experiment five.—A large dog was killed and immediately injected with five-per-cent. formalin both by the rectum and into the peritoneal cavity, the pressure being eight and fifteen inches respectively. About seven hundred and fifty c. c. having been placed in the peritoneal cavity, the needle was removed. The pressure in the intestines was, however, kept up for twenty-four hours. Upon post-mortem, the intestines appeared perfect in gross and were hard and bleached, but of normal size. Upon section, both large and small intestines, though examined in several places microscopically, showed no distortion of parts, and were in all ways well preserved, the connective-tissue cells, however, being slightly shrunk, and thus not so good as in experiment number three, where two-per-cent. formalin was used instead of five per cent.

The apparatus required is as follows: A large hollow needle, a cannula with a bulbous extremity for the rectum, a few feet of rubber tube, and a rubber douche bag or glass reservoir. Care must be taken that the fluid does not pass into the intestines at a great velocity, as the epithelial cells will easily become detached. Two-per-cent. formalin, or more correctly eight-tenths-per-cent. aqueous solution of formaldehyde, is recommended. The best results are obtained by injecting both the peritoneal cavity and the intestines with the preservative.

It believed that this method, on account of its cleanliness, rapidity, and simplicity, can be applied by the members of the house staff in hospitals or even by the attendant of the deadhouse *immediately* after death. The autopsy may then be delayed for any length of time from ten to forty-eight hours.

Details for the preservation of the stomach on the same lines have not yet been worked out. The slow introduction of the fluid into the organ by an œsophageal tube after death would seem to offer little difficulty, however.

The tissues preserved in this way may be placed in water for a short time, then in fifty-per-cent., eighty-per-cent., and ninety-seven-per-cent. alcohol successively, then imbedded and cut in the ordinary manner. HENRY POWER, M. D.

THE OVARIAN GRAFT.

49 WEST THIRTY-NINTH STREET, NEW YORK, *September 16, 1895.*

To the Editor of the New York Medical Journal:

SIR: To the reviewers who are in possession of my recently published notes I wish to state that the description of ovarian grafting was published before practical results had been obtained, because of the probability that much time might elapse before proofs of the utility of the procedure could be recorded. On returning from my vacation, however, I find that two of the cases of patients operated upon at the clinic have given results as follows:

Case I.—Miss L. B., aged twenty years. Infantile uterus and rudimentary annexa; otherwise well developed. Had never menstruated. Suffered from common symptoms of suppressed menstruation. Received an ovarian graft in the fundus of her uterus from the ovary of another patient. Two months later menstruated for the first time, menstruation lasting for ten days.

Case II.—Mrs. J. F., Jr., aged twenty-six years. Septic tubal disease of long standing had nearly obliterated the ovaries and tubes, leaving the pelvis filled with dense adhesions. Chronic metritis. Remnants of ovaries and tubes removed. A small piece of her own diseased ovary was transferred to the interior of the stump of one oviduct (saline solution transmission). The patient became pregnant a month later, but lost a well-developed fœtus by abortion at the third month, presumably because of persistent adhesions.

Robert T. Morris, M. D.

DR. LOWREY'S VARICOCELE NEEDLE.

Neola, Iowa, *September 24, 1895.*

To the Editor of the New York Medical Journal:

Sir: A few typographical errors appeared in my article in your *Journal* for September 14th descriptive of my varicocele needle. The thirteenth line should read: The *print*, etc. The twenty-ninth line: Now pass the blunt-pointed needle through the canal of its companion, etc. I have received a number of inquiries concerning the needle which I have not the time to answer individually. I refer the writers to George Ermold, 312 East Twenty-second Street, New York.

J. H. Lowrey, M. D.

Proceedings of Societies.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

Eighth Annual Meeting, held in Chicago, on Tuesday, Wednesday, and Thursday, September 24, 25, and 26, 1895.

Dr. J. Henry Carstens, of Detroit, in the Chair.

After an address of welcome by Dr. W. E. Quine, of Chicago, and a response by the president, the reading of papers was proceeded with.

Bilateral Suppurating Parotiditis.—Dr. James F. W. Ross, of Toronto, read a paper with this title. He narrated a case in which, after vaginal hysterectomy, on the tenth day after the operation, the temperature had risen to 103° F., and a swelling in each parotid gland had presented itself. The swelling had gradually increased. The sides of the face had become enormously swollen, the eyelids had become puffed, and the patient could scarcely open them. The complication he believed to be an unusual one. Double parotiditis, he said, was seen occasionally as one of the sequelæ of the infectious diseases, a distinctly septic disease. It was difficult to believe that the removal of the ovaries could produce parotiditis. If parotiditis had a peculiar tendency to follow the removal of the uterus, we should have sufficient data upon the subject to make us well aware of this fact also.

Dr. Edwin M. Ricketts, of Cincinnati, related a similar case in which, two days after the removal of the diseased appendages, a double parotiditis had made its appearance.

Dr. C. C. Frederick, of Buffalo, had seen a case in the practice of a prominent practitioner in Buffalo a few years before in which a double parotiditis had followed ovariotomy. The woman had made a good recovery. There had been no suppuration in the case.

Dr. James F. Baldwin, of Columbus, narrated an instance in which the parotiditis had been limited to the left side, and had followed a vaginal hysterectomy on about the third day. It had been accompanied by elevation of temperature, pain, and swelling.

Dr. W. G. Macdonald, of Albany, said that parotiditis associated with the removal of the uterine appendages was not a new thing. Among the earlier operations it had not been an unusual complication. The patients, however, usually died. He had seen one case following a supravaginal hysterectomy. He had also seen it after amputations of the thigh.

Dr. John M. Auld, of Chicago, had seen one case of non-suppurative parotiditis of one side. It had followed perineorrhaphy and an operarion for hæmorrhoids.

Dr. H. W. Longyear, of Detroit, had seen parotiditis associated with typhoid fever.

Dr. A. H. Cordier, of Kansas City, said parotiditis occurred with greater frequency than was supposed in connection with operations involving the ovaries and tubes. He was inclined to believe that there was a sympathetic relationship between the ovaries and the parotid gland.

Dr. A. H. Ferguson, of Chicago, asked as to the condition of the patient's mouth at the time of the parotiditis. In scarlet fever, diphtheria, and a number of diseases associated with disease of the uterine appendages, extension took place to the parotid gland. In such cases the mouth was foul, and if it could be kept clean parotiditis was not so apt to occur.

Dr. Ross said it was well known that the parotid glands, the thyreoid gland, and the submaxillary glands frequently became inflamed in inflammatory disease of the testicles, but as to inflammation of the ovaries, we were not so sure. He could not say as to the condition of his patient's mouth at the time of the operation.

The Intermediate Treatment of Puerperal Sepsis.—This paper was read by Dr. A. B. Miller, of Syracuse. The author summarized his remarks as follows: 1. Suspected infection of the birth canal should be confirmed when possible by a bacteriological examination of vaginal secretions, and every means of distinguishing it from other affections should be resorted to, that it might be treated rationally either by medicine or surgery. 2. Irrigation and antiseptics destroyed the nutrition of the parts when continued, and, furnishing increased moisture, improved the field for the development of micro-organisms, aside from the danger of death resulting from the antiseptic used. 3. The birth canal could be kept comparatively dry by absorbent dressing, removing the culture media, and arresting the development of germs and infection until the abraded parts had been repaired.

The Indications for Operation in Puerperal Sepsis.—Dr. L. S. McMurtry, of Louisville, followed with a paper thus entitled. Since operative surgery a few years ago, he said, had disclosed the various lesions of pelvic disease, it had been known that pregnancy and the puerperal state might be complicated by pre-existing inflammatory diseases of the uterine appendages, tumors, and septic accumulations inside the pelvis. Chronic and circumscribed disease of this character might be converted into acute and diffuse inflammatory conditions by the trauma of labor. Puerperal sepsis might in this way be the result of pre-existing disease. This class of cases must necessarily be small, since women thus diseased were, as a rule, sterile. That such cases necessarily came within the scope of operative treatment would be generally conceded. The indication and guides for operative interference in this class of cases were also considered by the author. In all cases of puerperal sepsis, he said, the most careful examination of the pelvic organs should be made.

He also alluded to the class of puerperal cases in which the local symptoms were those of diffuse peritonitis without localization of lesions, but where the uterus was presumably the focus of infection. This class of cases had recently been discussed extensively in relation to treatment by hysterectomy. Empirical operations in surgery were likely to prove more disastrous than similar methods of treatment in medicine. The gravity of such cases might often justify exploration and drainage, but the more extensive operation of hysterectomy would almost invariably prove disastrous.

Dr. W. E. B. Davis, of Birmingham, Ala., said, with reference to cases of puerperal sepsis, that where the temperature ran high the patients usually died in from a week to ten days, and he believed surgery offered very little hope.

Dr. Herman E. Hayd, of Buffalo, said that where a septic condition took place in the endometrium, or where there remained a portion of the placenta which broke down, he was satisfied that a sharp curette should be used. With a sharp curette the surgeon could scrape away a good piece of tissue and yet do very little harm.

Dr. William Warren Potter, of Buffalo, said there was no puerperal fever except that due to infection; that if the history of these cases had been carefully traced, the gynæcologist would find underlying infection somewhere, which might be carried into the genital tract either by the obstetrician himself or by the environment of the puerperal woman; hence the great collateral interest lying closely alongside this subject was the one of preventive medicine. The important question was aseptic midwifery. If aseptic midwifery was practised in every case, there would be no puerperal sepsis, and no ophthalmia neonatorum.

Dr. W. P. Manton, of Detroit, stated that he had never had in his private practice a case of puerperal sepsis. In reference to the use of the curette, it was an instrument, if properly used, which was absolutely devoid of harm.

Dr. H. W. Longyear believed that when the uterus was packed full of gauze it prevented the flow of mucus, blood, and serum. While more or less serum might possibly come away, fragments of placenta or blood-clots would certainly be retained. Rise of temperature, etc., should not be an indication for surgical interference in puerperal sepsis.

Dr. William H. Myers, of Fort Wayne, emphasized the importance of distinguishing between septicæmia and pyæmia in considering the subject under discussion.

Dr. C. C. Frederick said that, out of forty cases of puerperal septicæmia which he had seen in consultation in the last eight years, only two patients had died. Nothing could be found in the uterus, and there had hardly been any localized symptoms.

Dr. James F. W. Ross, of Toronto, said the subject was of the greatest importance inasmuch as a new craze at the present time had seized the profession, that of taking out the uterus in cases in which it was unnecessary, in his opinion, to remove that organ. The pendulum had swung too far, as it did when the removal of the ovaries was undertaken for vague symptoms, and the association should take some means of swinging it back again to its normal position.

Dr. W. G. Macdonald, of Albany, related a case in which he had favored the use of the sharp curette.

Dr. Sherwood Dunn, late of Paris, France, said that in the Broca Hospital, Paris, there were a hundred and eighty-four beds, forty-eight of which were devoted to obstetrical cases. In his three years' connection with the hospital service there no case of confinement had ever been followed by any septic condition.

Dr. A. J. Burgess, of Milwaukee, said that in cases of uterine traumatism, especially in abortions, where there was retained septic material within the uterus, it was absolutely impossible to curette it away with a dull instrument. He had seen the dull curette used for half an hour at a time, and yet two days afterward pieces of membranes or clots the size of a hen's egg had come away. With a sharp curette everything could be removed.

Dr. A. H. Cordier, of Kansas City, emphasized the importance of treating every case of puerperal sepsis as an individual one. Where surgical interference was called for, it must be resorted to early if we expected to save lives.

Dr. G. E. Krieger, of Chicago, predicted that in time we should treat puerperal sepsis very much in the same manner as we treated diphtheria, with serum.

The President emphasized the importance of distinguishing between the different forms of infection. While the obstetrician might in some cases infect his patient, he believed in a self-infection. He thought a sharp curette was not necessary for removing the shreds of membrane or other *débris* that might be left.

Dr. Frederick Blume, of Pittsburgh, said it had been proved years ago that in fifty per cent. of healthy women there had been found streptococci or other pathogenic microorganisms in the vagina. He used a sharp curette for curetting the uterus.

Exceptional Location of the Blood-clot in a Case of Ruptured Ectopic Gestation Sac.—Dr. Marcus Rosenwasser, of Cleveland, reported an extremely interesting case, which was presented with the hope that the knowledge of such possibility might prevent future confusion of an otherwise clear diagnosis.

Dr. H. W. Longyear, of Detroit, reported a case where a woman had bled for several months. On opening the abdomen, the cavity had been found filled with blood and clots, and after a tedious operation he had been compelled to leave some of the clots in the abdomen. The patient had died of shock some three or four hours after the operation.

Dr. James F. W. Ross, of Toronto, reported a case of acute general peritonitis produced by the rupture of a suppurating clot. After an ectopic gestation this clot had been found lying in the neighborhood of the broad ligament, and had not been connected with the tube at all.

Dr. Edwin M. Ricketts, of Cincinnati, said that the cases reported impressed us as to the importance of the earliest possible diagnosis. The subjective symptoms should be more carefully considered.

Dr. W. E. B. Davis, of Birmingham, related a case, that of the wife of a physician, who had been delivered at full term of uterine pregnancy. Then a mass had been detected in the right lumbar region, which had continued to grow larger. The patient had been losing blood. An operation had revealed ectopic gestation. The bleeding had been easily controlled and a rapid operation done, but the patient had died from shock. Dr. Davis also cited another interesting case.

Dr. Rufus B. Hall, of Cincinnati, emphasized the necessity of an early operation, or at least an early exploration, in all instances of obscure abdominal disease. After an experience of fifteen operations for ectopic pregnancy, he was more and more convinced of the necessity of early operative interference.

Dr. Thomas J. Maxwell, of Keokuk, Iowa, called attention to transfusion with common-salt solution to tide the patient over in severe cases of hæmorrhage.

Ruptured Interstitial Gestation Sac.—Dr. L. H. Dunning, of Indianapolis, followed with a paper on this subject. After describing the case in detail, the author drew the following conclusions: 1. A ruptured tubo-uterine gestation sac was more frequently fatal than a ruptured tubal gestation sac, for the reasons that in the latter case the rupture frequently took place through the abdominal end of the tube, in which case but slightly vascular adventitious tissue was torn, while in the former case vascular uterine tissue was torn. Again, in tubal pregnancy not infrequently the rupture took place through the inferior surface of the tube into the folds of the broad ligaments, and thus the amount of hæmorrhage was limited, while in tubo-uterine pregnancy such a rupture was rare. 2. In a ruptured tubo-uterine gestation sac before the fifth month, unless the abdominal section was done early, the anæmia would be profound, so that the patient would be unable to withstand any operation involving prolonged anæsthesia and manipulation. The operation should be as free from shock as possible. 3. There was no pedicle to tie. 4. All actively bleeding points must be secured by ligature. 5. Mr. Tait had proposed hysterectomy as a proper procedure in such a case. Unquestionably, if the patient was not too greatly shocked or anæmic, such a procedure would be clearly indicated. 6. As a measure attended by less risk of shock, the writer proposed the tying of bleeding arteries, clearing the gestation cavity of the ovum, the establishment of free communication between the gestation cavity and the uterine cavity, the establishment of free drainage by means of tube and gauze, and finally the closure of the rent in the uterine wall by deep and half-deep sutures or by Czerny and Lembert stitches, or, instead of this method of closure, the stitching of the walls of the gestation cavity to the lower angle of the incision, with drainage from above and through the uterine cavity, and finally closure of the upper opening by tying deep sutures placed and left untied at the time of the operation. This latter method would probably be found applicable only in a limited number of cases—namely, in those where the uterus was freely movable and could be brought to the abdominal wall without tension. Whether the methods proposed by the writer had ever been employed, he did not know, and whether they would prove of value, a trial must demonstrate.

Dr. T. J. Watkins, of Chicago, had met with a number of cases of extra-uterine pregnancy, but none of interstitial pregnancy with rupture. He had seen one case where the tube had ruptured, the placenta had grown fast to the cornu of the uterus, and it had been impossible to form a pedicle, the condition in the case being similar to that of an interstitial pregnancy.

Dr. Byron Robinson, of Chicago, stated that he had been fortunate enough to examine a specimen belonging to Mr. Tait. So far as operating in these cases was concerned, it seemed to him that anything other than hysterectomy meant death to the woman.

Dr. Henry T. Byford, of Chicago, said that, while he had never encountered a case of interstitial pregnancy, it was very essential to know how to proceed in such cases by surgical interference.

Dr. A. H. Cordier, of Kansas City, had seen one case of interstitial pregnancy in the practice of Dr. Lanphear, in which the uterus had contained in addition several fibroids. An abdominal hysterectomy had been performed.

Intraperitoneal Adhesions.—Dr. E. T. Tappey, of Detroit, read a paper with this title. He said that abdominal surgery within the last few years had established, among other things, that many of the pains, vague uncomfortable feelings, and so-called dyspepsias were caused by adhesions of various organs in the abdominal and pelvic cavities. The question of diagnosis was often perplexing and in many instances impossible without abdominal section. Wherever there was pain, and palpation did not reveal any tumor or other enlargement, adhesions were one of the possible causes. The author believed it proper to subject cases of chronic dyspepsia, chronic and obstinate constipation, and cases of persistent pain which was caused by the accumulation of flatus, to exploratory incision to determine whether there were adhesions and for the purpose of severing them.

Intestinal Obstruction—Clinical Observations.—Dr. W. G. Macdonald, of Albany, read a paper thus entitled. He said that in no branch of abdominal surgery was precise diagnosis so difficult or were operative procedures more taxing to the ingenuity of the surgeon. At the present time surgeons of experience were quite unwilling to give a definite opinion until the abdomen was opened. There was a large group of cases of ileus which might be regarded as purely symptomatic, a condition in which the continuity of the intestinal tube was interrupted, but the obstruction was due to conditions of paralysis in the intestinal wall.

The treatment could not always be preventive from conditions which arose during operations. The enucleation of pus tubes or an extra-uterine pregnancy sac involved the leaving of extensive denuded surfaces to which intestines readily attached themselves, and those who had done secondary section could readily testify to the number of innocent adhesions found as a result of primary operations.

A Clinical Contribution to the Study of the Lateral Displacements of the Uterus.—Dr. Edward J. Ill, of Newark, read a paper on this subject. After reviewing the literature, the reader spoke of the importance of this abnormal condition, and thought it had been generally overlooked, the patient's symptoms being attributed to other ailments. He had collected from his last year's office case-book all cases of lateral displacements except such as had presented tumors. He showed that in 14·2 per cent. there had been lateral displacement. He drew special attention to those cases which he considered to be congenital and where the pain was referred to the elongated broad ligament. The symptoms began early in the patient's sexual life, in severer cases progressing gradually to complete invalidism. He then related *in extenso* several histories. He described a typical case. The non-operative treatment consisted in endeavoring to elongate the shortened ligament by the use of dry wool or oakum tampons pushed between the cervix and the ilium on the side of the shortened ligament, keeping the tampon in place by a second and third one. All this was to be retained for forty-eight hours. A hot douche, with the patient on her knees and elbows, twice daily, when the tampons were *in situ*, was also ordered. He related two cases of extreme suffering where total extirpation of the uterus, tubes, ovaries, and broad ligament had been deemed advisable after years of unsuccessful treatment, in both of which the patients had been much relieved of their suffering.

Some of the Indications and Advantages of Vaginal Hystero-salpingo-oophorectomy.—Dr. X. O. Werder, of Pittsburgh, read a paper in which he said that the operative results in suppurative disease of the pelvis in the hands of the abdominal surgeon formed one of the proudest chapters in modern surgery. While a more careful method and a more thorough operation had lessened the number of fatal cases, they had not been entirely eliminated. Hysterectomy with salpingo-oophorectomy in suppurative disease of the pelvis not only allowed us to remove the nidus of infection more completely, but gave the patient the very best chance for complete recovery without adding any additional risk to the operation. The mortality compared favorably with that of salpingo-oophorectomy alone. He thought hystero-salpingo-oophorectomy was unquestionably the operation of the future, but whether vaginal or abdominal, still remained *sub judice*. The vaginal method had many features to recommend it. It precluded the possibility of ventral hernia, and intestinal and omental adhesions to the line of incision; it was followed by less shock, because of the minimum exposure of the peritonæum during the operation and absence of manipulation of the abdominal viscera. Convalescence was more rapid and recovery more complete. Two cases of vaginal hysterectomy were then reported by the author.

(*To be continued.*)

Book Notices.

Traité clinique et thérapeutique de l'hystérie, d'après l'enseignement de la Salpétrière. Par le Docteur Gilles de la Tourette, professeur agrégé à la faculté de médecine de Paris, etc. Seconde partie, hystérie paroxystique. Two volumes, pp. 550 and 596.

It is four years since the first part and volume of this comprehensive clinical work on *la grande névrose* was published. It treated of interparoxysmal or continuous hysteria, of its causes and symptoms or stigmata, of all which forms the basis upon which the acute paroxysms are developed. The present and second part, on paroxysmal hysteria, enters fully into the description of the hysterical attack with its many variations and modifications.

The author insists, very wisely, upon the distinct entities of epilepsy and hysteria. An epileptic may be hysterical or an hysterical person may be subject to epileptic seizures. But there is no more relation between the two than there is between any two diseases occurring together. The term hystero-epilepsy is simply begging the question, and conveys no more meaning than hystero locomotor ataxia. Death may occur during an hysterical attack, but there are no authenticated cases of its having done so unless there were present some grave organic lesions as well.

In chapters six, seven, and eight are considered the variations of the hysterical attack where sleep is the equivalent. The author believes that the peculiar condition known as narcolepsy is often of hysterical origin. Catalepsy is a morbid condition which very often occurs as part of the hysterical attack, although it also is found among maniacs and melancholiacs.

M. de la Tourette has held for many years that hysterical persons alone were hypnotizable, that the hypnotic state was simply an induced hysterical seizure, differing from the hysterical sleep only in the method of its production. This theory, now generally accepted, gains increased strength from the relations which he points out between the different varieties of unnatural sleep and hysteria. The chapter on somnambulism is a very interesting one, filled with illustrative and instructive instances.

The remainder of the work is devoted to hysterical affections of special organs—of the skin, which may be subject to hysterical gangrene, pemphigus, and eczema. Erythromelalgia, first described in this country by S. Weir Mitchell, is frequently found in individuals subject to hysteria. The fact that hysteria is now generally believed to be a vaso-motor disturbance explains these conditions satisfactorily.

In the chapters on hysterical affections of the motor apparatus, the variable and peculiar hysterical atrophy is described. It is certainly rare in this country, although its existence is unquestioned. The hysterical affections of the respiratory, digestive, and genito-urinary apparatus conclude the part of the work devoted to symptomatology. The recommendations as to prophylactic treatment are carefully and minutely made. Such measures should be undertaken in early childhood, and they are similar to those necessary for any child born with hereditary nervous taint. The physician should have psychic control of his patient, but hypnotism should be used only with the greatest caution and only when the accidents which it causes are less grave than the symptoms it is intended to cure. Isolation is the only rational means of treatment, combined with hydrotherapy and electricity. The author believes in the efficacy of the static machine. M. de la Tourette joins with Charcot in condemning oophorectomy and similar operations. Such procedures are illogical and their inefficiency, to say the least, has been amply demonstrated. The book closes with the treatment of individual hysterical accidents.

The work as a whole is the most comprehensive that has appeared on the subject, embodying as it does much personal observation and extensive reading. Like many monographs, and especially those of the French school, it is voluminous and tedious. It is filled with long and unnecessary quotations which might have been disposed of by the substitution of a few lines or a reference. In one volume, instead of two, it would have been equally valuable to the neurologist, and would have obtained a wider popularity. It is interesting as being an exposition of the disease as observed at the Salpêtrière, the "cradle of the diseases," as it has been called. In regard to the grand and typical attack—hysteria major—M. de la Tourette rejects with energy the suggestion of Bernheim that it is the "attack of culture" never seen outside of the Salpêtrière. Be that as it may, hysteria, common as it is in America, does not present the exaggerated form so often observed by the school of Charcot.

The Filtration of Public Water-supplies. By Allen Hazen, Late Chemist in Charge of the Lawrence Experiment Station of the Massachusetts State Board of Health, etc. First Edition. First Thousand. New York: John Wiley & Sons, 1895. Pp. x-197. [Price, $2.]

Like Mr. Hazen, modern sanitarians are likely to "find as much pleasure in a bright glass of water from the city tap as in a stately city hall." They should be glad, too, that another instructive book has been added to the body of literature existing on the subject. This book should be in the possession of such boards of public works as are considering the improvement of their inferior water-supplies, especially where the records of recent European and American researches into the subject of filtration on the large scale can not be considered at first hand. Mr. Hazen's connection as chemist at the Lawrence station of the Massachusetts State Board of Health, and his familiarity with the great quantity of information incorporated in the last six issues of the excellent *Reports* of that board, together with the fact that he has investigated various European plants which serve as models of filtration on the large scale—all these contribute to the merit of the book. For one who has not access to the valuable literature on filtration that has appeared in German journals and as monographs during the last fifteen years, an especially important part of this book is comprised in the appendix portion, between page 138 and the index. It is to be regretted that the book is not more complete and up to date in the matter of mechanical filtration. It ought at least to allude to the very exhaustive experiments made at Providence, R. I., which served to convert the city engineer and some others to the view that there are economic conditions under which mechanical filters are preferable to gravity filters for purifying the water supplied for the use of a city.

BOOKS, ETC., RECEIVED.

A System of Surgery. By Various Authors. Edited by Frederick Treves, F. R. C. S., Surgeon to and Lecturer on Surgery at the London Hospital, etc. Vol. I. With Two Colored Plates and 463 Illustrations. Philadelphia: Lea Brothers & Co., 1895. Pp. xxxi–1152.

A Text-book of Practical Therapeutics, with Especial Reference to the Application of Remedial Measures to Disease, and their Employment upon a Rational Basis. By Hobart Amory Hare, M. D., B. Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Fifth Edition, enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co., 1895. Pp. x–17 to 740.

An Introduction to Pathology and Morbid Anatomy. By T. Henry Green, M. D., F. R. C. P., Physician and Special Lecturer on Clinical Medicine at Charing Cross Hospital, etc. Seventh American from the Eighth English Edition, revised and enlarged by H. Montague Murray, M. D., F. R. C. P., Physician to Out-patients and Lecturer on Pathology and Morbid Anatomy at Charing Cross Hospital. Illustrated by Two Hundred and Twenty-four Engravings. Philadelphia: Lea Brothers & Co., 1895. Pp. 7 to 598.

Lectures on Appendicitis and Notes on other Subjects. By Robert T. Morris, A. M., M. D., Fellow of the New York Academy of Medicine, etc. With Illustrations by Henry Macdonald, M. D. New York: G. P. Putnam's Sons, 1895. Pp. viii–163.

Disorders of the Male Sexual Organs. By Eugene Fuller, M. D., Instructor in Genito-urinary and Venereal Diseases in the New York Post-graduate Medical School, etc. Philadelphia: Lea Brothers & Co., 1895. Pp. v–17 to 241.

The Growth of the Brain. A Study of the Nervous System in Relation to Education. By Henry Herbert Donaldson, Professor of Neurology in the University of Chicago. London: Walter Scott, Limited, 1895. Pp. 6 to 374.

Astigmatism According to and Contrary to the Rule. By Dr. C. H. Perry, Oneida, N. Y. [Reprinted from the *Ophthalmic Record.*]

The Thumb as an Initial Factor of Civilization. By W. R. Whitehead, M. D., Denver, Colorado. [Reprinted from the *Medical Record.*]

The Causes of the Neglect of Suppurative Ear Disease. By James Erskine, M. A., M. B., Glasgow. [Reprinted from the *Glasgow Medical Journal.*]

Chicago's Need of Special Hospitals for Consumptives. By John A. Robison, M. D., Chicago. [Reprinted from the *North American Practitioner.*]

Malignant Endocarditis with Vegetations in the Right Auricle and a Perforation of the Inter-auricular Sæptum. Mitral and Aortic Regurgitation. By John A. Robison, M. D. [Reprinted from the *International Clinics.*]

The Combination of Hysteria and Organic Disease. By Hugh T. Patrick, M. D., Chicago. [Reprinted from *Medicine.*]

Sull' uso dei nitriti nella cura delle malattie infettive. Pel Dott. M. Petrone. [Estratto dalla *Riforma Medica.*]

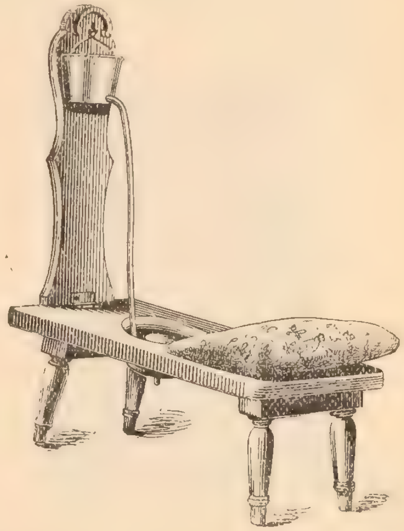
New Inventions, etc.

THE DOUCHE BATH FOR GYNÆCOLOGICAL AND OBSTETRICAL CASES.

Described by John Francis Burns, M. D.,

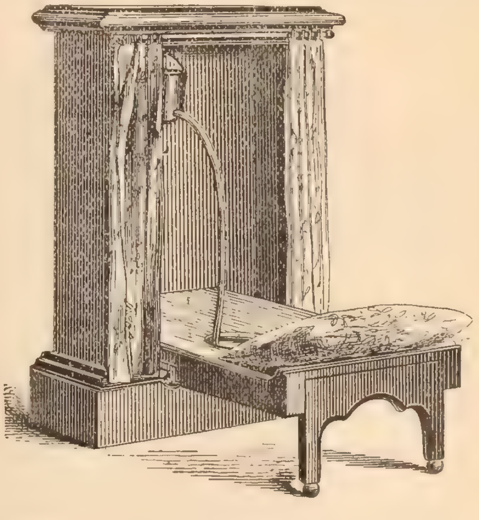
VISITING SURGEON TO ST. JOHN'S HOSPITAL, LONG ISLAND CITY, N. Y.

It often happens that in our endeavors to attain exactness in the management of certain diseases we overlook simple means that are as essential to success as the most complex medical or surgical measures.



This is especially so with gynæcological cases of a medico-surgical type, and any one who has had much experience, either in public or private practice, will recognize the truth of this statement in connection with the employment of douches in such cases.

Most practitioners testify that the douche in these cases is a valuable auxiliary if properly used, but all alike express strong doubts as to the benefits gained from the douche as usually given—*i. e.*, in some slipshod, unscientific way.

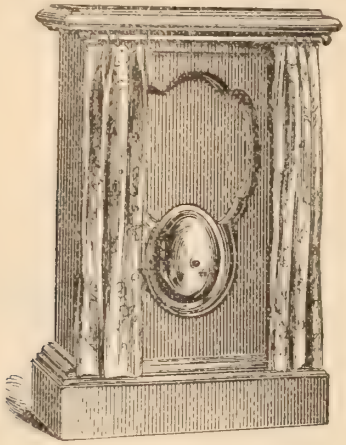


Anything, therefore, that will contribute to their more exact and scientific use will appeal both to the practitioner and his patient, and be a stepping stone forward.

Impressed with these reasons, I beg leave to draw medical attention to a simple and efficient apparatus designed for such purposes by Mrs. Oliva Grafstrom, a trained nurse of experience.

The apparatus is styled "the douche bath," and a glance at the accompanying cuts will show that it is made in two styles—one portable, for office, dispensary, and general practice, the other of cabinet design, for large hospitals, and for private use if desired.

Both are constructed so as to conform to modern antiseptic requirements, are as simple as can be made, and comparatively inexpensive.



The advantages of such a douche apparatus may be briefly summarized as follows:

1. Exactness, cleanliness, and comfort are insured to the patient.
2. The fluid (absorptive or medicinal) is distributed to all the parts designed to be benefited.
3. Great saving of time and labor to the physician, and the assurance that the patient is really receiving the benefit of that which is intended to do good. I believe also that the ideas made use of in this apparatus might be applied to surgical tables generally with advantage, and also be of benefit to those having genito-urinary surgical work to perform.

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Miscellany.

The Pathology and Treatment of Pruritus.—In the September number of the *British Journal of Dermatology* there is a report of a recent meeting of the British Medical Association at which Professor McCall Anderson, of Glasgow, read a paper on this subject. He dealt first with the anatomical features of the skin and their relation to the feeling of itching, then with the usual conditions in which itching was prominent, and finally with the treatment of this very troublesome symptom. He thought that the portions of the nervous apparatus of the skin especially involving the sensation of itching were as follows: 1. The free nerve terminations in the epidermis. 2. The small groups of cells taking the form of a cup and connected with nerve filaments situated in the deeper layers of epidermis or in the upper layers of the true skin. 3. Each hair, in virtue of the fine medullated nerve fibres which formed a network in the outer coat of the hair and terminated in its sheath, was more or less of a tactile organ, and it was probable that irritation of the hair might cause pruritus. It was very difficult to say, he said, why pruritus was such a prominent feature of some diseases of the skin and generally absent in others, such as the strumous affections; how it was absent in the earlier and present in the later manifestations of syphilis. The author referred to some of the more prominent causes, such as that of the pruritus which occurred in old age, which he attributed to the circulation of impure blood; that which occurred in connection with some cases of jaundice; that which came on in gouty persons, and in connection with the functional derangement of internal organs, especially of the digestive organs; that which occurred in diabetics; that which occurred in connection with the cold weather; and finally that which was dependent upon mental and not upon physical causes. He was of the opinion that most cases were dependent upon direct irritation of the nerve terminations in the epidermis.

Before entering upon treatment, said the author, it was very important to be sure of the diagnosis. All other disorders should be eliminated, such as urticaria, phtheiriasis, and scabies, in which the itching was but a symptom. A careful examination of the patient must be made in the light of its ætiological factors, and an endeavor made to correct any existing derangement. If the itching still persisted, then the disease must be treated empirically.

Professor Anderson expressed a preference for the employment of electricity, atropine subcutaneously, or the coal-tar derivatives, such as antipyrine and phenacetine, in gradually increasing doses. If, he said, there was any suspicion of nervous or nutritive debility, nerve tonics, such as phosphorus, arsenic, and strychnine, alone or in combination, might be tried, the two latter preferably by subcutaneous injection.

Dr. H. G. Brooke, of Manchester, used the term pruritus as meaning the sensation of itching generally, and not as confined to those particular forms which were unaccompanied by lesions of the skin. The sensation of itching, he said, varied enormously from a mere transitory titillation to a state productive of mad frenzy in which the patient lost all self-control and tore and scratched his skin until he gained relief. Dr. Bronson considered itching as a perversion of the sense of touch, a dysæsthesia of the nerve endings in the skin. It was certain, said Dr. Brooke, that epithelium was necessary to the production of the sensation of itching, for it did not occur in wounds until the epithelial covering was being reproduced. The author then detailed the different factors which were associated with the occurrence of the feeling of itching, and divided them into two main groups as follows:

Internal Group—Neurotic.—Purely nervous pruritus. The pruriginous diseases in which the pruritus was the primary disease had been laboriously studied by the French dermatologists, especially by Besnier, Brocq, Vidal, and Leloir, under the name of *névrodermites.* Reasons were given for objecting to the inclusion of some of the cases cited by these authors as examples of purely nervous pruritus, and for the probability that they were originally of local origin. But, said Dr. Brooke, there was no doubt that the recognition of the peculiar papular, brown, or bistrous-colored, indurated state of the skin to which they applied the term lichenification or lichenization, as being a condition induced entirely by the action of long-continued scratching, was a distinct gain; it was entirely a secondary manifestation and not to be confounded, as it had been, with different chronic eczematous and lichenous eruptions. All itching diseases did not lead to lichenification, even if of long continuance. Senile pruritus was always quoted as the arch-type of this pruritus without prurigo class, in which there was a characteristic absence of secondary lesions; but they were by no means always restricted to the aged, and they were not always distributed over the whole body. They might occur in younger people, even in infants, and they were at times restricted to some limited area of the body, such as the face, the hands, the tongue, the anus, and the genitals. The great majority of the cases of ano-genital pruritus did not belong to this class, but were of external (mostly seborrhoic) origin; and those did not which, although exhibiting no external lesions, were caused by the presence of irritable nerve-endings the destruction of which removed the symptoms. In the purely neurotic cases the origin was more central, and required the complete destruction or ablation of the offending regions for their cure.

When lesions were present in conjunction with pruritus it was always important, from a practical point of view, to determine whether the pruritus was primarily neurotic and the lesions were secondary, or whether the pruritus was secondary to lesions arising from other causes. Besnier, said the speaker, grouped all the various primarily neurotic itching diseases of this kind under the term diathetic prurigos. Their first and always prevailing symptom was pruritus. The lesions which accompany them were never distinctive or specific in character, but of an erythematous or lichenous kind at first, and, especially at the later stages, presented some form of lichenization or eczematization in one or more of its varied manifestations. The diathesis might forsake the skin temporarily or finally, to reappear in the lungs as bronchitis or asthma, or in the nose as hay fever, or sometimes in the gastro-intestinal tract; it might wear itself out by degrees and disappear finally, but, in Besnier's opinion, it was not amenable to any treatment. Dr. Brooke remarked that he could not agree to this prognosis, for he had found that much could be done to influence and even to effect the recovery of many of these forms of pruritus. The conditions, he said, were certainly more unfavorable when the disease was hereditary or congenital. The essentially pruriginous group of papular, vesicular, or pemphigoid affections were usually of neurotic origin, although the influence of gastro-intestinal troubles and of certain foods in producing, or rather in precipitating, outbreaks showed that they were by no means exclusively so. Urticaria, in like manner, said Dr. Brooke, might be of a purely neurotic character, and it was well known that a shock or even a mere thought might suffice to bring on an attack of wheals and itching. Itching was also found as a preliminary symptom of some of the severer forms of nerve disease, and Leloir had described several of these prodromal forms of pruritus under the name of *dermatonévroses indicatrices*.

Lastly, there were the forms of itching which Crocker had designated pruritus mentis, in which the patients suffered incessantly from severe itching, which they attributed to some purely imaginary ailment; this was really a form of monomania.

Reflex Nervous Pruritus.—Reflex itching, said Dr. Brooke, occurred at times almost to every one. A point on the skin was noticed to itch from no perceptible cause, and perhaps momentarily, and the sensation was immediately followed by itching at one or more points, often quite remote from the original point and from each other. It was merely interesting as showing the wide area over which even a slight and very limited pruritus might be reflected.

Pruritus which was caused secondarily by reflexes from internal organs, or from some kind of mechanical or chemical irritant, was not uncommon. As instances, the author cited the itching which preceded or accompanied the development of serious intestinal or gastric disease, such as carcinoma; the itching which accompanied pregnancy and diseases of the uterus; the general itching caused by the presence of tapeworms in the intestines; that due to the action of gritty food, such as oatmeal; the itching at the end of the penis excited by stone in the bladder, and at the end of the nose by the irritation of ascarides in the rectum. The itching which was caused by the action of cold and heat on the skin came probably into this division, for in the affections known as pruritus hiemalis and æstivalis, it did not occur on parts of the body which were the most exposed to the heat and cold, but, and especially in the pruritus hiemalis, on well-protected regions, and even when the patient was still in bed, until tolerance of the frost had been established. The symmetrical angeioneuroses which often accompanied winter pruritus also suggested the reflex rather than the direct action of the cold. Urticarial eruptions which had been excited by the action of cold to one part of the body might extend far beyond the original field of action, and develop reflexly a more or less widely dispersed pruritus.

Hæmatic.—A very frequent, distinct, and, in the minor degree of development, not unfrequent class of pruritic cases were those in which the itching was caused by the irritation of toxic substances which had been produced in the body and circulated in the blood current. The itching in diabetes, in gout and lithæmia, in rheumatism, in kidney disease, and in jaundice were cited by Dr. Brooke as examples. They were often, but not invariably, accompanied by some angeioneurotic eruption, generally erythematous or urticarial in character. A similar condition was sometimes caused by fermentative processes taking place in the bowels, and was relieved by the administration of antiseptics. The urticarial pruritus of children was found to be very frequently associated with the presence of rhachitis, and seemed to be the result, in large measure, of the dilated stomach and consequent imperfect digestion which was so general in these cases.

The presence of irritating matter in the blood often exaggerated itching, which was due primarily to other and often external causes; gouty conditions and imperfect action of the heart had this effect. Besnier thought that many cases of pruritus senilis were brought on by such states of the blood rather than by nerve degeneration.

Idiosyncrasy was always an essential factor in hæmatic pruritus, for only a small number of those who were the subjects of blood poisonings of these kinds showed any tendency to irritability of the skin.

Foods and Drugs.—The same remark, said the author, also applied to the pruritus which sometimes followed the ingestion of certain foods and the exhibition of certain medicines. Thus some people complained of a vague irritation of the skin after partaking of quite ordinary foods and drinks, such as tea, coffee, alcohol, cheese, etc., while mercury, belladonna, and especially opium, were known to excite itching, often of a pronounced character in special patients. The presence of symmetrical erythematous and other lesions showed that the poisons might attack the nerve centres as well as their terminations.

Mechanical Pressure.—The itching of hæmorrhoids and of the genital region in cases of pregnancy were apparently due to the pressure of the blood in the engorged venous plexuses, for it occurred apart from any skin lesion and disappeared when the pressure was removed, *Abnormal Secretion of the Skin.*—The skin of otherwise healthy people was disposed to itch at times on account of its abnormal deficiency of lubrication. It had been attempted to explain this as the result of interference with the excretory functions, but the view that it was caused by the formation of minute fissures and the partial exposure of the nerve terminations was more probable, for although the relief derived from sudorifics would tally with both these hypotheses, the relief which was given by simple lubricants in limited patches of slight ichthyosis (which presented very similar conditions) gave stronger support to the latter explanation, and it was known that the healthy kidney very completely compensated any deficient action of the skin.

External Group.—The various external causes, said Dr. Brooke, which give rise to pruritus were divided into three headings: 1. Local skin diseases. 2. Epizoic parasites. 3. Irritants of a physical and chemical nature. It was impossible, however, to separate them very clearly from each other. The first and most important point, he said, was to determine whether the itching was due entirely to the local lesion of the skin, or to some systemic condition. This was easy in such diseases as ichthyosis, but very much more difficult in affections like lichen planus, psoriasis, and certain seborrhoic and acute eczematous eruptions which might appear suddenly, and in people who were in other respects quite healthy. But whatever theories were held as to their causation, they were always treated as if they were due to a local excitant, and more reliance placed on local than on internal remedies. Acute eczema was one of the most prolific sources of pruritus, and many of the cases were of undoubtedly parasitic origin. The eruption generally spread because the system was debilitated and the sensory and vaso-motor nerves in an easily excitable condition; but this state might supervene secondarily to the loss of rest caused by the incessant itching of one or two limited areas. It was known that the itching provoked by several substances, such as the poison of the *Acarus scabiei*, of some of the primula species, and of iodoform might be transmitted in some individuals by absorption, or directly by the nails during scratching, over a wide surface of the body, and that it might give rise to typically eczematous rashes, and it was thus suggested that the extension of parasitic eczemas, or of eczema which had become parasitic (judging from their mode of extension), might, in like manner, be due to the transmission of infective substances by absorption or by scratching, over previously healthy areas of the skin. A knowledge of the possibility of such a mode of extension, said the author, was a valuable aid in the treatment of some of these pruritic eruptions, and might help to explain why so many of our antipruritic remedies were of the disinfectant and bactericide class.

The itching, which was brought on by sudden changes of temperature, more especially by sudden exposure to cold, as when the patient rapidly undressed and got into bed, was perhaps due in part to the rapid removal of pressure from the skin, for it occurred in healthy skins; but in the case of inflamed lesions it was more probably attributable to the inability of the blood-vessels to accommodate themselves at once to the change of blood pressure; it was, perhaps, by correcting this inequality that warm applications were able to relieve the pruritus so markedly. Change of posture from the upright to the recumbent was also a well-known provocative of itching, presumably also from alteration in the blood pressure in the direction of increased tension.

Except through the intermediation of some lesions, such as dermatitis, chilblains, sudaminous and miliarial eruptions, heat and cold seldom produced itching by their direct action on the skin. The action of the actinic rays of the sun might set up intense pruritus, but it also was confined to the area of the lesions which they caused to appear, as in the urticaria which might start out after even a momentary exposure to the diffused light of a summer day, or in the papules and erythematous blotches of the prurigo æstivalis group of affections.

The pruritus which was caused by contact with certain drugs and plant poisons was often very severe, and its origin might easily escape notice, since any accompanying eruptions, which might be present, were seldom pathognomonic. It was, however, said Dr. Brooke, most important to investigate such cases, since they were generally due to an acquired idiosyncrasy toward some article of daily use. The action of rough underclothing was referred to as a common source of itching, even in merely irritable skins, and as a not infrequent agent in the spreading of a local disease through the scratching to which they gave rise.

In most of the cases in which pruritus was present it was but a symptom, but it was the symptom from which the patients were most desirous of being relieved, and it was for this symptom rather than for the disease that they sought the doctor's help.

Izal as a Disinfectant and Antiseptic.—In the *Medical Chronicle* for September there is a report on izal by Professor Sheridan Delépine, of Victoria University. Among the most remarkable features of this compound, he says, are its comparative insolubility and non-volatility at the ordinary temperature, properties which it seems difficult to associate with an active disinfectant, but which numerous experiments have proved not to be incompatible in this case. Izal can be freely administered internally, used over extensive wounds, or injected under the skin without bad effects, and does not damage surgical instruments.

As it was the author's intention to study carefully the effects which certain disturbing factors might have on the results obtained, he investigated the action of izal on a small number of germs. He selected them so as to get types of the most important forms of pathogenic bacteria which one might have to deal with in practice. These organisms were the *Bacillus tuberculosis* (*hominis*), the *Bacillus coli communis*, the *Staphylococcus pyogenes aureus*, and the *Bacillus anthracis* (in the sporing stage). In the course of the last seven months he has conducted over a hundred experiments with these four microbes, paying special attention to the conditions of growth, temperature, dryness, age of germs, etc., which might be expected under ordinary circumstances to influence the resistance of bacteria or the activity of any disinfectant.

The Action of Izal on the Tubercle Bacillus.—Sputum obtained from a case of advanced phthisis and found teeming with tubercle bacilli was allowed to dry on paper for seven days, being kept during that time in a closed capsule in the dark at the temperature of the laboratory (15° to 20° C.). Pieces of paper so prepared were then severally steeped in izal, in izal one part of which had been diluted with five parts of water, and in izal diluted with ten parts of water. In each case the infected paper was allowed to remain in the disinfecting fluid for forty-five minutes, after which it was removed and inserted under the skin of a guinea-pig. In a check experiment, paper smeared with the same quantity of the same sputum, and prepared at the same time and in exactly the same way as the other pieces of paper, was also inserted under the skin of a guinea-pig of the same age and size as the other guinea-pigs. In all the cases in which the sputum had been treated with izal, fifty-four days after inoculation no evidence of tuberculosis was found post mortem, even at the seat of inoculation; while in the check animal tuberculosis was already well marked on the twenty-seventh day, and very advanced on the fifty-fourth. Similar results were obtained with paper smeared with scrapings of a tuberculous gland obtained from a case of recent general tuberculosis, the tubercular matter being allowed to dry as in the previous case. Fresh tuberculous matter from a cheesy lymphatic gland (tuberculosis of fifty-six days' duration) was made into a thick emulsion with sterilized water. This was mixed with izal one part of which had been diluted with ten parts of water, and after two minutes the excess of izal was removed with sterilized filter paper. The thick pulp left was allowed to dry for twelve hours, and then a guinea-pig was inoculated subcutaneously with it. A check guinea-pig was inoculated with exactly the same quantity of a part of the original emulsion of cheesy gland which had not been treated with izal. After fifty-four days the first animal showed no trace of tuberculosis at the post-mortem examination. The check animal was already in an advanced state of tuberculosis at the end of three weeks, and the disease was found, post mortem, to be extensive fifty-nine days after inoculation.

The author deduces from these experiments that izal mixed with ten parts of water will disinfect in forty-five minutes dried tuberculous sputum or other tuberculous matter, and that fresh tuberculous products of great virulence, when mixed with about an equal quantity of izal of the same strength, and allowed to dry at the ordinary temperature for twelve hours, are also completely disinfected.

He is unable to state how much shorter time or greater dilution the disinfectant will admit of.

In interpreting the results, he says, it is necessary to remember that the *Bacillus tuberculosis*, though not known to be a sporing organism, is one which is not easy to kill under ordinary circumstances. This is due to the bacillus being usually imbedded in thick mucus or in cheesy products which effectually offer a barrier to some of the best chemical disinfectants (owing to their being usually at the same time capable of causing coagulation of albuminous compounds). The great resistance which the bacillus presents to the effects of drying is another reason why it is so difficult to kill, for, as desiccation is not fatal to it, the germ may remain active in the midst of masses too dense to be penetrated by disinfecting solutions of poor penetrating power or incapable of acting for a considerable length of time.

The Action of Izal on the Bacillus Coli Communis.—The bacilli used in these experiments had been obtained from fatal cases of Asiatic cholera. Before being used, the microbes had been cultivated for nine days on potato, and the growth then scraped off and mixed with sterilized alkaline broth. With the emulsion so obtained silk threads were impregnated. These threads were allowed to dry for six hours in a sterilized capsule in the dark, the temperature being about 15° to 20° C. After this they were placed severally in izal diluted with five, ten, fifty, a hundred, and two hundred parts of water, and allowed to remain in the mixtures for one minute in the case of the stronger solutions, and for ten minutes in that of the weaker ones. After this they were transferred to tubes containing alkaline bouillon, some being previously washed in sterilized water, others not. Check threads that had not been exposed to the action of the izal, but had been kept in sterilized water for the same length of time as the other threads had been, were also cultivated in alkaline bouillon. After twenty-four hours at 36° C. the check tubes showed a typical growth of *Bacillus coli*, but there was no growth in any of the tubes containing threads which had been dipped in izal. These tubes were watched for twenty days, and during the whole of that time no trace of growth could be discovered. This absence of growth was tested not only by microscopical examination, but also by plate cultivations in nutrient gelatin and agar.

It is therefore evident, says the author, that izal diluted with two hundred parts of water is a safe germicide for micro-organisms as resistant or less resistant than the *Bacillus coli communis*.

The Action of Izal on the Staphylococcus Pyogenes Aureus.—The *Staphylococcus pyogenes aureus*, one of the most resistant cocci, is widely distributed in external media, says the author, and is undoubtedly one of the commonest causes of suppuration. It was, therefore, a fair specimen to use for testing the value of izal in the treatment of ordinary wounds. In this case fresh cultivations of agar were made, and after being kept for forty-eight hours in the incubator at 36° C. the tubes were left for twenty-four hours more at the temperature of the laboratory. The growth was then scraped off and spread thickly on small pieces of sterilized filter paper. The paper so infected was allowed to dry slowly at the ordinary temperature in a sterilized capsule, kept in the dark, for three hours. These pieces of paper were then steeped in izal diluted either with one hundred or two hundred parts of water, and left in the mixture for two hours, one hour, or ten minutes. After these various exposures the pieces of paper were removed, washed carefully in sterilized water, and dropped into tubes containing alkaline bouillon. In a check experiment the paper was left in sterilized water for the same length of time as the other papers had been left in izal, and then transferred to alkaline bouillon. From none of the papers treated with izal diluted with one hundred parts of water could any growth be obtained. The same was true when izal was diluted with two hundred parts of water, except when the exposure was not more than ten minutes in duration. The bouillon inoculated remained clear for three days (during which it was kept at a temperature of 30° C.), and at the end of that time it was impossible to obtain any evidence of growth by plate cultivations in nutrient gelatin. A sufficiently large quantity of the bouillon was used in each case to prevent any chance of error. In the check experiments a well-marked growth was obtained at the end of twenty-four hours, and at the end of thirty-six hours the bouillon was very turbid. Plate cultivations made with this culture proved that nothing but the *Staphylococcus pyogenes aureus* had grown in the bouillon.

From this it seems evident to the author that izal diluted with one hundred parts of water is a reliable antiseptic for the dressing of surgical wounds made with the usual antiseptic or aseptic precautions.

The Action of Izal on the Bacillus Anthracis.—In making experiments with the *Bacillus anthracis* it was not thought necessary to study the action of izal on the non-sporing organism. Spores of great virulence were used. These spores were prepared in the same way as those which had been used in previous experiments and been found to resist ordinary disinfectants in usual dilutions, with the exception of the most powerful chemical agents. Judging by the results obtained with carbolic acid, the author did not expect that izal would be capable of killing these spores in a reasonable time, and the results justified his expectations. The most interesting results obtained were those proving the remarkable inhibitory power which even diluted izal had on the growth of the anthrax spores. Thus in alkaline bouillon to which the one hundredth part of izal had been added it was impossible to get the spores to show any sign of growth, even when kept at a temperature of 36° C. for seven days, no precaution being taken to prevent the volatilization of izal. The spores, however, were not killed, for after thorough washing in sterilized water and cultivation in fresh bouillon an abundant growth was obtained.

The author sums up by saying that izal diluted with one hundred or even two hundred parts of water is a powerful and reliable antiseptic when contact for a sufficient length of time is secured. As an antiseptic it is more powerful than carbolic acid, and as it causes very little irritation of living tissues, as in moderate doses it is not poisonous, and as, practically speaking, it is not volatile, there can be little doubt as to the immense advantages which it possesses over carbolic acid.

The Adventures of a Scientific Paper.—In consequence of his communication on the serum treatment of tuberculosis presented to the recent annual meeting of the British Medical Association Professor Maragliano, of Genoa, has had an amount of greatness, or at any rate celebrity, thrust upon him which he is probably beginning to find somewhat inconvenient. Though the paper was professedly intended for the British Medical Association, it seems by a mysterious process of thought transference to have been brought immediately to the knowledge of the editor of our esteemed contemporary the *Berliner klinische Wochenschrift*, who published it *in extenso* in his issue of August 12th, before we ourselves had had the opportunity of seeing the document. Almost simultaneously it appeared in the *Gazzetta degli ospitali*, the *Riforma medica*, and other Italian journals, and copious extracts from it were given in the leading political papers of Europe. Immediately after the London meeting the professor's philanthropic zeal appears to have led him to Bordeaux, where he presented the same communication to the Congress of Internal Medicine which met in that city. Several of the French medical journals are angry with Professor Maragliano for having offered a second-hand article to the Bordeaux congress, and have therefore declined to let the paper appear in their report of the proceedings. The editor of the *Revue médicale*, having asked Professor Maragliano for an explanation of the bewildering rapidity with which a knowledge of his discovery had been diffused throughout the world, has received a reply to the effect that only a mere abstract of his paper was read in London. His words are: "The text of the communication was given only to the secretary, but, I repeat, the communication was not read." As the editor of the *Revue médicale* went on to invite us to make a statement on the subject, we have communicated with the reporter of the section, Dr. H. J. Campbell, and he informs us that the English translation of Professor Maragliano's paper was read by Dr. Herringham, one of the secretaries of the section, who condensed it somewhat in reading. Dr. Campbell adds that during the reading of the paper he believes Professor Maragliano stood by Dr. Herringham. It appears to us that the matter has little more than a psychological interest. Professor Maragliano has the fervid conviction of an apostle, and, therefore, doubtless believed it to be his mission to spread his gospel as widely as possible. We should be glad, however, to learn some more precise details than he has yet vouchsafed us as to the preparation of his specific.—*British Medical Journal.*

California Wines.—The *Boston Medical and Surgical Journal* for September 12th publishes a report upon various articles of domestic use, by Dr. Bennett F. Davenport. With regard to the wines produced in California, he says, samples of the hundred and ninety-four brands of California wines represented at the Chicago Columbian Exposition were afterward analyzed in the laboratory of the United States Department of Agriculture at Washington by Dr. W. H. Krug. The wines were from all the important districts in the State, and included all the various types grown. These were judged as to their quality by the standards adopted in Germany, upon the report of the imperial commission, although these might not be absolutely fair to wines grown under different climatic and soil conditions. In only a few samples, says the author, was any sediment noticeable, most of the wines, both white and red, presenting a fine appearance, showing that they had been well matured before being bottled.

Only three samples exceeded the German limit for potassium sulphate, thus showing that plastering had not been excessively used. When it is remembered, he says, that it is the sweet wines of southern Europe which are the ones preferred for medicinal use, and that it is these same wines which are the ones most extensively plastered, the advantage of the sweet wines of California for such use, as none of them were found to exceed the German limit, can be appreciated. Many of the wines had, however, been excessively sulphured in the fumigation of the casks for the prevention of oxidation and of the growth of mycoderma in the wine; thirty-three out of the eighty-seven wines examined in regard to this particular had been excessively treated. This custom of fumigating wine casks with sulphur has been in general practice among wine producers for centuries, and nothing better, when properly used, has yet been discovered. In only four of the wines was any salicylic acid found.

On the whole, says Dr. Davenport, it was evident that the California dry wines were fully equal to the European wines, and the red wines were in every respect superior to the young French clarets. The sweet wines are to be unconditionally preferred to those of Europe containing the same amount of alcohol and extract, as not being plastered. This superiority is already being appreciated in Europe; and it is only a question of time when an extensive foreign market will be open to one of the most promising American home products.

Chloral.—The *Medical Record* for September 21st contains an editorial on this subject in which the writer says that chloral is usually considered to be essentially a hypnotic and sedative drug. It has, however, he says, quite a number of other uses. In New York it has long been employed, in small doses, as a vaso-dilator, two or three grains being given, combined perhaps with iodide of potassium. Associated with this same drug, Dr. Pal finds it of service in bronchial asthma, and the same physician has found it effective also, in doses of from ten to twenty grains, in checking bleeding from the lungs. On the same principle—that is, on the principle of its relaxing arterial tension—Dr. Cherchevsky has used it in small doses daily to counteract coldness of the feet and hands, which are such disagreeable symptoms in some cases of anæmia and neurasthenia. Dr. Pal has also recommended chloral hydrate as a laxative in various forms of chronic constipation, principally those of neuropathic patients. The dose here, however, is more than twenty grains, and, as the *Practitioner* truly says, the drug must be a dangerous one to use for such a purpose.

M. Spehn recommends chloral very highly as a local application for boils. He directs that the boil should be kept covered with a tampon of cotton well soaked in a solution of chloral hydrate, glycerin, and water. The strength of the solution is about two drachms to the ounce.

A writer in the *Semaine médicale* recommends chloral for children who are irritable and restless when suffering from scarlet fever. Another use of chloral is in certain forms of dyspepsia in which there is a sense of distention with pain in the neighborhood of the cardiac end of the stomach. This dyspepsia usually occurs in neurotic persons and may be termed a nervous type of the disorder. According to the *Therapeutic Gazette*, a little chloral hydrate (one or two grains) dissolved in peppermint water is of service here.

Chloral is recommended by Playfair, in his text-book, for dilating the rigid cervix during the early stages of labor.

The writer is somewhat loath to give chloral any more prestige than it already has. Still, he adds, it is a drug which has been shown to be of some service in epilepsy, and which is one of the sheet-anchors in acute alcoholism; but it is also a drug whose continued use, even in rather moderate doses, is sure to injure the patient eventually. Chloral needs always to be given cautiously at first, and never for prolonged periods of time.

Camphorated Salol.—In a report on dermatology by Dr. John T. Bowen, published in the *Boston Medical and Surgical Journal* for September 19th, it is remarked that Elsenburg has used this preparation in various cutaneous affections for two years, and has found it of special value in furuncles and carbuncles. It is prepared by moistening one part of camphor with a few drops of alcohol, and rubbing this in a porcelain mortar with 1·4 part of salol until a transparent liquid is obtained. A change, says Dr. Bowen, takes place in from twelve to twenty-four hours; the pain diminishes, the redness and inflammation of the adjoining parts disappear, and the tumor becomes progressively smaller, without the formation of pus. As a rule, the secretion obtained from the vesicle at the point of the furuncle yields a pure culture of the *Staphylococcus aureus* on nutrient media, as do also bits of the infiltrated tissue. After camphorated salol has been used for twenty-four hours, no such cultures can be obtained. When suppuration has already taken place in the furuncle, and after the slough has been removed, the pain and hyperæmia may be much lessened by the application of the camphorated salol, and the suppuration diminished. The healing process then advances quickly, a slight discoloration, and some infiltration being felt only for a short time. The method of using the drug is to lay bare the point of the furuncle, or, in the case of carbuncle, to make several moderately deep incisions, in order to facilitate penetration into the infiltration; afterward the lesion and the surrounding hyperæmic parts are covered with cotton compresses soaked in camphorated salol, and an impermeable covering is placed outside.

Erythema of the Face of Nervous Origin.—At a recent meeting of the Lyons *Société des sciences médicales*, a report of which appears in the *Lyon médical* for September 1st, M. Humbert Mollière related the case of a young girl who had been attacked with a singular lesion, of a trophic nature, on the face. Over the cheek bones, immediately below the orbital cavities, two erythematous patches were seen. Their surface had the aspect of a very slight eschar, and a close examination revealed at their periphery the existence of small vesicles, which appeared to have constituted the primitive lesion on its entire surface. In two or three days similar patches had developed immediately below the first two.

This singular eruption, said the author, was interesting from a pathological, dermatological, and medico-legal point of view. There had been slight itching, but the patient had felt no pain. The eruption evidently was not consecutive to nephritis. On the other hand, the affection being painless and at the same time bilateral, it could not be attributed to zoster. M. Mollière also rejected the hypothesis of an artificial lesion or one provoked voluntarily by irritating substances, as the patient had not used caustic ointments, and had no object in deceiving the physicians. Another examination had been made and shown that there was a profound and complete anæsthesia of the skin, and the author thought that the nutritive troubles of the skin could be attributed to hysteria.

M. Mollière had observed another case of a woman who was subject to violent attacks of hysteria, who showed without any other cause groups of acute pemphigus, which disappeared soon after the attacks. There seemed to exist, he thought, a certain analogy between these two cases. This fact was also interesting from a medico-legal point of view, for the spontaneous lesions presented by the patient had some connection with those to which a criminal traumatism might give rise, such as an attempt at choking one to death. This series of ecchymoses covered with eschars resembled very much the traces which were left on the skin by the fingers of a murderer. In the case of a subject attacked with a similar lesion, who might enter a false complaint, the physician would have a task which might present great difficulties.

The Treatment of Dacryocystitis with Fluorol.—The *Presse médicale* for September 14th publishes a report of a recent meeting of the *Congrès français de médecine interne* at which M. Duclos read a paper on this subject. The author stated that he had employed sodium fluoride, or fluorol, in the treatment of dacryocystitis in its different stages. The drug was a bluish-white salt, odorless, and soluble in water. A one-per-cent. solution instantly and definitively arrested vital fermentations, but it did not suspend chemical fermentations. A one-per-cent. solution, and even a solution in the proportion of one in two hundred, prevented the development of pyogenic bacteria. It was preferable to corrosive sublimate, to nitrate of silver, to potassium permanganate, and to formol, because injections of it into the lacrymal ducts were not painful, and especially because of the curative effects obtained by M. Duclos.

M. Lagrange thought that the good results obtained with fluorol in the treatment of dacryocystitis, where the injections of corrosive sublimate had failed, were due to the fact that fluorol did not coagulate the albumin, and the microbes were not protected against its action by a covering of albumin. Furthermore, the mucous membrane of the lacrymal ducts tolerated, without the least reaction, injections of fluorol, which was not caustic or painful. It did not provoke the least irritation, and the mucous membrane, which was not so much vascularized by this drug as by other antiseptics, offered a less favorable ground for cultures.

The Disappearance of the First Heart Sound in Typhoid Fever.—The *Mercredi médical* for September 4th publishes a report of a recent meeting of the *Congrès français de médecine interne*, at which M. Mongour stated that he had ascertained that the first heart sound had disappeared during the course of typhoid fever in two patients. From the study of these cases and of analogous ones, he said, the following conclusions might be drawn: 1. The disappearance of the first heart sound at the apex or at the base, at whatever stage of the disease it occurred, had no grave prognostic signification if the number of the pulsations did not exceed a hundred and ten. If, however, they exceeded this number, the disappearance of the systolic murmur might be considered as a fatal sign. 2. While this disappearance appeared to be connected with the existence of myocarditis, the cardiac acceleration seemed rather to depend on a toxic action on the nervous centres. This second tendency of the toxic agent was much more serious than myocarditis, which was generally cured.

The Tri-State Medical Society of Alabama, Georgia, and Tennessee will hold its seventh annual meeting at Chattanooga, on October 8th, 9th, and 10th, under the presidency of Dr. R. M. Cunningham, of Birmingham, Ala. The programme includes the following papers: When to Amputate, by Dr. Duncan Eve, of Nashville; Women as Physicians: Ought they to be Encouraged to Enter the Profession, by Dr. J. C. LeGrand, of Anniston, Ala.; Syphilis, by Dr. James T. Jelks, of Hot Springs, Ark.; A Report of a Case of Pseudo-hypertrophic Muscular Paralysis, by Dr. G. Manning Ellis, of Chattanooga; A Complicated Case of Obstetrics; Rupture of the Uterus, by Dr. E. T. Camp, of Gadsden, Ala.; Synthetic Perineotomy in Laceration of the Perinæum, by Dr. R. R. Kime, of Atlanta; How to do Abdominal Section without Fuss, Feathers, or Foolishness, by Dr. Joseph Price, of Philadelphia; A New Rapid Method of Treating Zona, with Illustrative Cases, by Dr. A. H. Ohman-Dumesnil, of St. Louis; The Nucleins and their Relative Value in Therapeutics, by Dr. R. H. Hayes, of Union Springs, Ala.; Iodide of Potassium, by Dr. G. A. Baxter, of Chattanooga; The Busy Practitioner and his Journal, by Dr. Harold Havelock Kynett, of New York; The Uses and Abuses of Cocaine, by Dr. T. Hilliard Wood, of Nashville; The Treatment of Malignant Cutaneous Epitheliomata (Cancers), by Dr. A. R. Robinson, of New York; A Report of a Case, by Dr. Daniel T. Nelson, of Chicago; Bile in the Peritoneal Cavity, by Dr. W. E. B. Davis, of Birmingham, Ala.; Early Diagnosis and Vaginal Hysterectomy in Cancer of the Uterus, by Dr. James A. Goggans, of Alexander City, Ala.; Reflect, by Dr. E. H. Sholl, of Birmingham, Ala.; The Necessity of Enucleation of the Eyeball, by Dr. Flavel B. Tiffany, of Kansas City; Acromegaly, with a Report of a Case, by Dr. J. R. Rathmell, of Chattanooga; When Consumptives should go to Colorado and Why, by Dr. J. C. Minor, of Hot Springs, Ark.; The Surgical Treatment of Tuberculosis of the Shoulder and Elbow Joints, by Dr. B. G. Copeland, of Birmingham, Ala.; the president's address, by Dr. R. M. Cunningham, of Birmingham, Ala.; Some Simple Procedures in Tedious Labor, by Dr. R. M. Harbin, of Rome, Ga.; The Treatment of Diphtheria, by Dr. R. P. Johnson, of Chattanooga; The Operative Technique for Abscess of the Apex of the Lung, by Dr. J. D. S. Davis, of Birmingham, Ala.; A Report of a Neglected Case of Abortion; Curettement, by Dr. J. Morgan Clack, of Rockwood, Tenn.; The Diagnosis of Incipient Phthisis, by Dr. L. P. Barbour, of Tullahoma, Tenn.; Water *versus* Atmosphere the Cause of Malignant Malarial Fever, by Dr. J. B. Cowan, of Tullahoma, Tenn.; The Placenta, When and How Delivered, by Dr. J. B. Murfree, of Murfreesboro, Tenn.; and Uric Acid as a Factor of Disease, by Dr. E. Van Goidsnoven, of Atlanta.

Formol in the Treatment of Diseases of the Urinary Tract.—At a recent meeting of the *Association française pour l'avancement des sciences*, a report of which is published in the *Mercredi médical* for September 11th, M. Lamarque related his experience with this drug. Twenty patients suffering with blennorrhagic urethritis, acute or chronic, blennorrhagic cystitis, and tuberculous and purulent cystitis from various causes, had been subjected to a treatment consisting in instillations or in irrigation. The solution employed for irrigation was in the proportion of one in five hundred; for the instillations a ten-per-cent. solution was used. In blennorrhagic urethritis, both acute and chronic, the results had been contradictory; in a few cases the discharge had been cured very rapidly, while in others there had been no amelioration. Furthermore, in certain subjects the treatment had had to be suspended on account of the very acute irritation caused by the topical application. In the anterior urethra the irrigations or instillations of formol were very painful and were followed by an irritating reaction, generally rather intense. However, said M. Lamarque, some success had been obtained by the employment of this drug. In one case especially, where instillations of nitrate of silver had failed, good results had followed the use of formol. The posterior urethra and the bladder, in blennorrhagic inflammation, appeared to tolerate formol much better, although the introduction of the drug was followed by a rather sharp pain, but generally of short duration. Formol was especially indicated, he said, in tuberculous cystitis, and in all cases where it had been tried there had been a great amelioration, whether the mode of treatment had consisted in instillations or in irrigation. The pain was rather sharp at first, but it lasted a few minutes only. Formol was sometimes much better tolerated than corrosive sublimate. The results obtained from the experiments with this drug were the rapid disappearance of blood in the urine, considerable mitigation of pain, and the very notable diminution of the frequency of micturition.

The New York Academy of Medicine.—At the last general meeting, on Tuesday, October 3d, the order for the evening was to be a paper entitled An Abstract of a Report of the Gynæcological Service at Mount Sinai Hospital for the Twelve Years ending January 1, 1895, by Dr. Paul F. Mundé.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 10th inst., the following papers will be read: Morphinism in Children, by Dr. J. B. Mattison; and Infection of the Newborn, by Dr. Ira Van Gieson.

At the next meeting of the Section in Neurology, on Friday evening, the 11th inst., Dr. J. B. Mattison will read a paper entitled A Tale of the Poppy and its Moral. Cases will also be presented.

At the next meeting of the Section in Surgery, on Monday evening, the 14th inst., Dr. Markoe, Dr. McCosh, Dr. Townsend, Dr. Curtis, and others will present patients. There will also be an exhibition of pathological specimens, new instruments, and apparatus.

Nosophene.—The *Revue internationale de médecine et de chirurgie pratiques* for September 10th contains an abstract of an article published in the *Nouveaux remèdes*, No. 12, on a new substitute for iodoform. Nosophene, or tetraiodide of phenolphthaleine, has been obtained, says the writer, by M. A. Classen and M. W. Loeb from the action of iodine on the solutions of phenolphthaleine. It is a powder of a yellowish color, odorless, insipid, insoluble in water and in acids, not easily soluble even in alcohol, but soluble in ether and in chloroform. Nosophene contains sixty per cent. of iodine, and it passes through the organism without setting free the iodine, whether it is employed externally or internally. It is not toxic and is deprived of all local irritating action. It has also bactericidal and drying properties.

The Cleveland Medical Society held a public meeting on September 27th under the presidency of Dr. William E. Wirt, to discuss the subject of local sanitation. The programme included the following papers: The Proper Disposal of Sewage and Garbage, by President Cady Staley, of the Case School of Applied Science; Diseases arising from Improper Disposal of Sewage and Garbage and from Contamination of the Water Supply, by Dr. C. O. Probst, of the Ohio State Board of Health; General Sanitation, by Colonel George E. Waring, of New York; The Water Supply of Cleveland and Sources of Contamination, by Colonel Jared A. Smith, United States Engineer Corps; and the Financial Side of the Question, by the Hon. Robert E. McKisson, of Cleveland.

Original Communications.

A CASE OF MELANCHOLIA DEPENDENT UPON ETHMOID DISEASE AND CURED BY INTRANASAL OPERATION.*

By F. H. BOSWORTH, M. D.

I report the following case, not so much in order to put on record a new disease cured by intranasal operation, but rather as illustrating and emphasizing the fact that cerebral and psychic disturbances may be the direct result of ethmoid disease, and also to put on record a story which to me is filled with no little pathos when we consider how completely life had become a burden to the patient, and to what extremes he resorted in his earnest and self-sacrificing struggle to regain his health. The history is as follows:

M. M. T., aged forty-two years, merchant, consulted me on April 17, 1891, with the following history: In 1876 he had an attack of severe influenza which developed into well-marked hay fever, his attacks coming on in August and lasting till frost. He also had some mild symptoms in the spring months. In 1881 he commenced to suffer from depression of spirits and sleeplessness, and soon fell into a sort of melancholia, which at first was somewhat periodical in character, but in later years had become almost constant. So profound was his melancholia that he was utterly unfitted for business, although perfectly conscious of his condition and exceedingly anxious and ready to resort to any possible method of gaining relief. As he described it himself, "Just before I succumbed to this nervous trouble, when I retired at night, my eyeballs seemed too large for their sockets. I remember having had on several nights a feeling of pressure, a twisted or tied-up feeling between the eyes, which seemed to hold my mind riveted to the unpleasant subjects which it was contemplating." Upon the advice of his family physician he went to Bermuda, but without avail. He then seems to have made the round of a large number of physicians, both in New York and Brooklyn. One advised him to go to work and make his hours as long as possible. Another advised him to place himself in the Middletown Asylum, which he promptly did, remaining a fortnight. Another advised him to work at gardening, which work he followed industriously for a while, but with no relief. Another sent him to the Adirondacks for the summer. Another put him on a course of electricity, which he followed for several months but received no help. He was then put on the Salisbury diet, but received no benefit. Being now convinced that medical advice was of no avail, he determined to try of what avail surgery would be, and was operated upon for varicocele by a distinguished homœopathic surgeon of this city, but his melancholia persisted. He then had the Baunscheidt used daily for three months along the spine, also in the left iliac region, without result.

His next effort consisted in having eyeglasses fitted for some possible error in refraction. This failing, he submitted to an operation for stricture, and, deriving no advantage, determined to have performed the operation of castration, which was successfully done on perfectly healthy organs. His melancholia persisted and, if anything, deepened, and now circumcision was performed. Having undergone this sacred rite without any improvement in his condition, the next resort consisted in the ligation of the pudic artery. His sufferings were as great as ever, and another system was invaded and hæmorrhoids were operated upon, and still his melancholia persisted. His spine was now cauterized unavailingly, and next a seton was inserted in the back of his neck and worn for a month. This measure was no more successful than the former.

He now returned to the oculist and had the muscles of his eyeball operated upon. This failing, a still more radical operation was determined upon, and a healthy eyeball was enucleated. In spite of all these measures the symptoms not only failed to improve, but his melancholia deepened, and life became so burdensome to him that he seriously contemplated suicide. Knowing the man as I subsequently grew to know him, I am convinced that suicide would have been the result had he not been a man of considerable force of character, with a full appreciation of the seriousness of his condition, and with too much manhood to resort to an act which he could only regard as cowardly and craven, although, as he has since expressed it to me, one of his principal hopes in submitting himself to these numerous operations was that in some of them he might succumb by the hand of the surgeon rather than by his own act. After this ten years of hopeless and pathetic search for health, during which he consulted a large number of physicians (and among them, if I were to repeat them, you would recognize some of the most prominent men of the profession), he was finally advised to consult a nose and throat specialist, and called upon me on the advice of Dr. Mattheson, of Brooklyn.

I found him in fairly good physical condition; fair in his statements to me; apparently perfectly frank in every respect as he recounted his previous history, yet evidently in a condition of profound mental depression. I examined his nasal passages and found almost complete occlusion of the right nasal cavity by an angular deflection of the left sæptum, while in the left side the middle turbinated body was markedly swollen, projecting into the hollow made by the deflected sæptum and covered by myxomatous tissue, showing distinctly the existence of ethmoid disease. I removed the projecting portion of the sæptum with a saw and subsequently snared off the projecting portion of the middle turbinated bone, thus opening up the ethmoid cells. These operations were followed by prompt and immediate benefit. In fact, he left my office with that peculiar sense of relief which is so common in these cases of ethmoid disease, although I should say here, of course, that I refer only to the aprosexia, not to the psychical symptoms, for nothing in my previous experience had led me to hope that such relief was to be expected, and yet, on his second visit to me, he reported great improvement in his mental and moral condition, and this continued so rapidly that three days after my first operation he resumed business, and is now at the head of a large concern which requires constant attention and acute business tact and judgment. As he tells me, he considers himself a better business man than ever, notwithstanding the long years of profound melancholia in which he lived and the various operations to which he was subjected. I ought to mention, perhaps, that his hay fever is also practically cured, substantiating the point that hay fever and allied affections are in many instances, probably, to be regarded as the direct result of ethmoid trouble rather than reflex in character.

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* Read before the American Laryngological Association at its seventeenth annual congress.

That the melancholia in this case was directly due to his ethmoid disease I think can not be questioned, and, furthermore, that it was due to some organic change at the base of the brain I fully believe. We thus do away with the obscure question of reflex or functional disturbances, and accept an explanation of these cases which is quite simple and easily understood. An inflammatory process in the ethmoid cells, with its accompanying intracellular pressure, is separated from the brain but by a very thin plate of bone. Hence, that circulatory or other disturbances within the cranium are liable to occur is not surprising. That they do, and that much oftener than we are usually taught to suppose, I fully believe, and the case reported above furnishes contributory evidence.

26 West Forty-sixth Street.

A CASE OF
SUPPURATIVE ETHMOID DISEASE
FOLLOWED BY INVASION OF THE SPHENOIDAL SINUS, ABSCESS OF THE BRAIN, AND DEATH.*

By F. H. BOSWORTH, M. D.

I was called on January 31, 1895, to see, in consultation with Dr. E. S. Warner, Dr. B., dentist, aged thirty-three, who gave the following history:

He had had for a number of years a purulent discharge from the left nostril which in the last few months had also extended to the right side. This had been a source of not much distress to him other than the offensive discharge and occasional headaches. On the 27th of January he was seized with a most intense and excruciating headache, which seemed to be neuralgic in character, and was confined largely to the left side of the head and face. His suffering was at times of a most agonizing character, and confined him to his room and to his bed. There was no psychical disturbance, no photophobia, or any suggestion of brain trouble. There was no fever. The pain was almost constant in character, and rendered sleep impossible, although large doses of anodynes were given.

When I saw him he had been suffering for four days. I found the man in the prime of life and of superb physique. An examination revealed large quantities of inspissated pus in the left nasal cavity and some on the right. I cleared out the left passage with cotton and probe, and found the middle turbinated bone somewhat swollen and pus oozing from between it and the sæptum. On passing the probe into the ethmoid cells I found the cell walls soft and crumbling, indicating necrosis, and was convinced that I had to deal with a case of suppurating ethmoid disease of long standing, and that the symptoms of the past few days indicated an invasion of the sphenoidal sinus, and, furthermore, that the only hope of relief was in thoroughly opening up the posterior ethmoid cells and, if possible, to extend my opening into the sphenoidal sinus. This I immediately attempted by means of a sharp-pointed gouge. This gave notable relief for the time, but on the 7th of February I was called to see the case again, and found that the relief had only been of a day or so's duration, and that his distressing symptoms had all returned. I then made use of a burr, three sixteenths of an inch in diameter, operated by the Devillbiss engine. This gave but little relief at the time, and on seeing him the next day I found that he had been seized on the morning of the 8th of February with a profound chill, followed by febrile movement, the thermometer indicating a temperature of 106°. He was in a semi-conscious condition and not easily roused, and partial paralysis of the left side of the face and arm had set in. During the day he had two other rigors at intervals of six hours, and died twenty-four hours after his first chill, the temperature before death declining to 103°.

There was no autopsy made, and yet I think there can be little question that the cause of his death was abscess at the base of the brain, caused by suppurating disease of the sphenoidal sinus, and that this was the result of a neglected suppurating ethmoiditis, the brain abscess lasting twenty-four hours, the sphenoidal disease thirteen days, and the ethmoid disease having been a matter of years. There are two points only which I desire to make in connection with this case, which I regard as both instructive and important, and these are: first, that while we do not practically regard ethmoid disease as dangerous to life, yet the possibility of an invasion of the sphenoidal sinuses is something always to be considered in giving advice in these cases; and, second, whereas the literature of the last four years has contained reports of a large number of cases of sphenoidal disease, I am led to think, in reading the detailed histories of many of these cases, that possibly some of them were cases of ethmoid disease reported as sphenoidal. My own records show reports of one hundred and fifty cases or more of ethmoid diseases which, as a rule, have yielded more or less satisfactorily to treatment, and have shown no dangerous tendencies, with this one exception. I have seen in all my experience but two cases of sphenoidal disease, and both terminated fatally.

26 West Forty-sixth Street.

A FURTHER CONTRIBUTION TO
THE STUDY OF SUPPURATIVE DISEASE OF THE ACCESSORY SINUSES,
*WITH REPORT OF CASES.**

By J. H. BRYAN, M. D.,
WASHINGTON, D. C.

While a great deal has been written on the subject of suppurative inflammation of the accessory sinuses of the nose within the past few years, it is a subject that can hardly be said to be exhausted. It is one of great importance, and is equally interesting to the ophthalmologist as to the rhinologist, and I trust not without interest to the general practitioner. I hope to demonstrate in this communication not only the serious nature of these affections, but also to point out the frequency with which they are overlooked; for, in spite of the advances that have been made in the study of diseases of the nose and its neighboring sinuses within recent years, we still find abscesses that have existed in these cavities for a long period and have been treated for neuralgia.

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* Read before the American Laryngological Association at its seventeenth annual congress.

* Read before the American Laryngological Association at its seventeenth annual congress.

I have selected a few typical cases from my case book which show the various phases of abscesses affecting these sinuses.

CASE I. *Abscess of the Right Maxillary Sinus resulting from Dental Caries.*—This patient, a man, thirty-nine years of age, stated when he consulted me that he had suffered from nasal catarrh for a number of years, the secretions being greater from the right than from the left nostril. He complained of frequent attacks of neuralgia, the pain being referred to the supraorbital and infraorbital regions rather than to the side of the face. His general health during the past year has been greatly impaired, having lost in weight, and complained of morning nausea, loss of appetite, foul breath, and difficulty in concentrating his attention on his work—that of a bookkeeper in a banking house.

When first seen by me he was emaciated, tongue furred, and complexion yellow. There was no swelling of the face, but there was some tenderness on pressure over the right canine fossa. He attributed his condition to nervous dyspepsia, and was under treatment for that affection when he came under my observation. A rhinoscopic examination showed a slight hypertrophy of the inferior turbinated bodies, but no secretion was observed in either nasal chamber. On blowing the nose, however, there was a slight discharge of foul-smelling pus from the right nostril. The upper first and second molar teeth of the right side were carious. He was referred to his dentist for their removal, and when he returned he brought with him the first molar, with a portion of a needle projecting about an eighth of an inch beyond the apex of one of its roots which had penetrated the floor of the antrum. He then recalled that about eight years previously he had picked the tooth with a needle which had broken off in the cavity. As it gave him no further trouble the incident was forgotten.

The treatment consisted in washing out the sinus with hydrogen dioxide and a saturated solution of boric acid through the opening left by the extraction of the first molar. In the course of three weeks pus had ceased to form and the alveolar opening was allowed to close.

The interesting feature of this case is the marked depression of the general health which was due to the swallowing and possibly slow absorption of the purulent secretions which had been going on for some time. Almost immediately after the removal of this source of irritation the dyspeptic and other nervous symptoms disappeared, and he soon regained his normal health.

CASE II. *Suppurating Ethmoiditis terminating in Caries of the Anterior Ethmoid Cells.*—Mr. C., sixty-eight years of age, consulted me December 4, 1894, stating that for ten years he had suffered with neuralgia, the pain starting at the inner angle of the left orbit, radiating over the corresponding side of the face and head, and was increased in intensity by an acute head cold. For a number of years he had a slight yellow secretion coming from the left nostril, but was not aware that it was accompanied by a bad odor. There was no swelling at the inner angle of the orbit and no disturbance of the vision.

Rhinoscopic examination showed the left middle turbinated body slightly enlarged, and a thin, purulent secretion was observed coming both from above and beneath it in the middle meatus. The mucous membrane was so much swollen as to block up the upper part of the nasal chamber and prevent a thorough inspection of this cavity. On the introduction of the probe into the middle meatus, caries of the anterior ethmoid cells was readily detected.

The ethmoid cells were opened by means of a sharp curette introduced into the middle meatus and all diseased bone removed under cocaine anæsthesia. It required a number of operations to accomplish this, and great caution had to be exercised in order not to injure the orbit, as the nose in this part was exceedingly narrow. At the last examination there was no pus present and apparently all diseased bone had been removed. The patient was entirely relieved of the pain referred to in the orbital region.

CASE III. *Abscess of the Left Frontal Sinus resulting from Nasal Polypi and Hypertrophic Rhinitis.*—The case was that of a man fifty years of age, who stated that he had been afflicted with nasal catarrh for a number of years, the secretions coming principally from the left side. He has had intense headaches, the pain being referred to the left forehead. For the past year he had not been able to breathe freely through the left nostril, and he believes his general health has been greatly impaired by his nasal trouble.

When he consulted me on April 1, 1895, he had just recovered from a severe attack of influenza, which had greatly increased his painful symptoms. The headaches were intense and were accompanied by marked mental depression, and greatly increased by any mental effort. The secretions were profuse and muco-purulent in character.

On examination the supraorbital ridges were observed to be very prominent, and the integument overlying the left frontal sinus was somewhat swollen and red, the blush extending down on the corresponding upper eyelid. There was pain on pressure both above and below the supraorbital ridge, and slight pitting of the skin on pressure over the sinus. Rhinoscopic examination showed slight hypertrophy of the right inferior turbinated body, with little or no secretion in this nostril. The left nasal chamber was found blocked up with numerous polypi springing from the middle turbinated body, and there was a marked hypertrophy of the inferior turbinate, which had become adherent to a small bony spine springing from the sæptum. The secretions could be blown from the nose, but a large quantity was observed passing out through the post-nasal space.

The treatment consisted in simply removing the polypi and the bony spine and reducing the hypertrophy of the inferior turbinate. This was sufficient to establish free drainage between the frontal sinus and the nose, which were found to communicate by an unusually large fronto-nasal duct. The secretions passed into the nose after all obstruction had been removed. With the rapid subsidence of the inflammation the patient has been relieved of all his distressing symptoms. There is still a slight secretion of mucus coming from the sinus, but this is also rapidly diminishing in quantity. This case is still under observation.

CASE IV.—*Abscess of the Frontal, Ethmoidal, and Maxillary Sinuses, with Caries of the Fronto-ethmoidal Cells.*—Mrs. —, aged forty-eight years, a native of Santa Cruz, West Indies, consulted me May 10, 1894, giving the following history: For the past twenty years she has been subject to frequent catarrhal inflammation of the upper respiratory tract. She has given birth to ten living children, eight of whom are alive and healthy, and she has had fourteen miscarriages.

She did not consider her condition a serious one until about seven month ago, when she noticed for the first time a thick, yellowish discharge from the left nostril. This secretion increased in quantity and was accompanied by a bad odor. She has had constant nausea and a bad taste in the mouth for several months. There has been no pain in the teeth, which are absolutely sound. She has noticed, however, that the upper teeth of the left side project farther than those of the corresponding side, which is especially noticeable on closing the jaws. Her condition has been growing steadily worse, and about three months before coming to Washington the occasional headaches gave way to constant painful sensations over the whole of the left side of the face, but especially severe over the supraorbital ridge. At times the pain was almost unbearable. Examination showed a congestion of the whole of the left side of the face with a slight swelling of the corresponding supraorbital and infraorbital regions, and a superficial injection of the conjunctiva of the left eye. Severe pain on pressure over the supraorbital ridge and canine fossa. There was some pitting on gentle pressure over the affected sinus. The teeth were unusually large and sound, with some recession of the gums, leaving a well-defined separation between the gums and the enamel. Rhinoscopic examination revealed a slight turgescence of the inferior turbinated body of the right side. On the left side both inferior and middle turbinated bodies were deeply congested and swollen, and the nose was filled with pus, which passed freely both from the front and into the post-nasal space when in the reclining posture.

Upon the use of the electric light the left frontal and maxillary sinuses were observed to be opaque, while the corresponding cavities of the opposite side were translucent. The examination of the eye made by Dr. W. H. Wilmer revealed a narrowing of the visual field for red and green colors, while the field for white remained normal.

The diagnosis of abscess of the maxillary and frontal sinuses having been made, on June 1st, after the extraction of the first molar tooth, I trephined through the alveolar process at this point; pus followed the withdrawal of the instrument, and about a teaspoonful of yellow gelatinous mucus, which is characteristic of inflammations of this cavity, was washed out with a warm saturated solution of boric acid. The sinus was washed out daily with hydrogen dioxide and a boric-acid solution. In the course of two weeks the secretion of pus within this cavity had apparently ceased, but large quantities of pus were still observed in the middle meatus, and the severe headaches continued.

With the subsidence of the inflammation within the maxillary sinus and upon the use of detergent and antiseptic lotions within the nose, the swelling of the turbinated bodies subsided to such an extent that ethmoid disease was excluded from the case. No diseased bone could be detected with the probe, and all attempts at sounding the fronto-nasal duct were futile.

June 18th.—The patient was sent to the Garfield Hospital and the frontal sinus opened in the following manner: After observing the customary aseptic precautions, the integument covering the supraorbital ridge was drawn up so that the line of incision would be just under the ridge when it returned to its natural position. The incision was then made through the skin down to the bone, beginning just within the supraorbital notch and terminating on the nose. After elevating the periosteum, an opening into the sinus about one centimetre and a half in diameter was made with a chisel at a point about midway between the supraorbital notch and the nasal boss. Something less than a teaspoonful of dark green and fœtid pus was washed out of the cavity. As the solutions seemed to pass freely from the sinus into the nose, it was not thought necessary to pass a drainage-tube from this cavity into the nose. The sinus was thoroughly explored with a probe, but no exposed bone could be detected, and the frontal sæptum was found intact. A drainage-tube was inserted into the outer opening and the wound closed. The cavity was washed out daily with hydrogen dioxide and a saturated solution of boric acid for a month. When the secretion of pus had apparently ceased, the drainage-tube was withdrawn and the opening allowed to close. I was about to discharge the patient cured, when she returned to the office one morning with pus discharging into the nose and through the fistulous opening in the forehead, with all of the former painful symptoms returned. She was sent back to the hospital on July 29th and the sinus reopened. Granulations were found around the margins of the opening in the bone and also at the inner and most dependent part of the sinus. These were scraped away with a sharp curette and the opening enlarged with the chisel. The cavity was again thoroughly explored with the probe for diseased bone or any other cause of the recurrence of the inflammation, but nothing could be detected. As the solutions passed freely through the fronto-nasal duct I did not even now feel justified in passing a drainage-tube from the sinus into the nose. The sinus was washed out with a solution of bichloride of mercury (1 to 6,000) and packed with iodoform gauze. This form of treatment was continued for two weeks, when, owing to a tendency of the external wound to close, the gauze dressing had to be discontinued and simple irrigations of the cavity with antiseptic solutions resorted to. Such antiseptics as the bichloride of mercury, tricresol, iodoform, and pyoctanin had no effect whatever on the secretions of pus, which continued to form in increasing quantities. In the mean time, pus was discovered again in the antrum, and during the irrigation of this cavity one morning I noticed that solutions injected into it found their way out through the frontal sinus opening, showing there was a direct passage between the two sinuses, thus accounting for the accumulation of pus in the antrum, amounting sometimes to as much as an ounce. As the stronger antiseptics seemed to irritate the mucous membrane of the sinus and the nose, I returned to the use of hydrogen dioxide and boric acid. The wound had now closed to such an extent that a small silver drainage-tube was passed into the sinus through which the pus found a ready exit.

October 21st.—On irrigating the frontal sinus the solutions were observed for the first time to pass through both nostrils, showing that the sæptum had become perforated. Owing to the possibility of there being a specific element in the case, the patient was given five drops of a saturated solution of the iodide of potassium three times a day, which was later increased to thirty drops three times a day without any benefit being observed.

November 16th.—The disease has evidently been a progressive one, for upon passing the probe into the middle meatus diseased bone was detected for the first time about the anterior ethmoid cells. The anterior half of the middle turbinated body was now removed with the electric burr in order to facilitate freer drainage and to render more accessible the anterior ethmoid cells, which were broken down and scraped away with a sharp curette. This, of course, was not done at one operation, but only after a number of sittings, and working from before backward until all carious bone was removed. From this time on the patient made progress toward recovery. The drainage-tube in the frontal sinus opening was removed February 1st, when it was evident that all secretion of pus had ceased. As soon as the metallic drainage-tube was removed the opening closed and the resulting scar was scarcely perceptible. As a precautionary measure a gold drainage-tube was introduced into the opening in the alveolar process, which she continues to wear in order to admit of free drainage of that cavity in case the secretions should be started again as the result of a cold. She was discharged cured March 1st, having been under observation for ten months. I have recently seen this patient, about two months and a half after she was discharged, and I am glad to report the sinuses were free from secretion, and the patient is comfortable and enjoying good health again.

Owing to the position of the accessory cavities, they are especially prone to inflammation, which may extend into them either from the nose or from the teeth when diseased, as in the case of the maxillary sinus. During the several epidemics of influenza that have prevailed here, I have met with a large number of cases in which the inflammation had extended into one or more of these sinuses and complicated the simple nasal affection to a very painful and serious degree. Aside from the true influenza, the inflammation of a simple rhinitis frequently extends into one or more of these cavities, and unless recognized and treated early is most likely to result in an abscess. It is very important that these cases should be recognized and treated early, for upon their early recognition depends their final issue, which in many cases has resulted in the death of the patient.

In previous communications on this subject I have devoted some attention to the suppurative inflammation of the maxillary sinus. In this paper I will limit my remarks as much as possible to the suppurative inflammation of the frontal and ethmoidal sinuses.

Aside from acute inflammations extending into these cavities, their secretions being retained and finally resulting in suppuration of their lining membrane, there are other and more frequent causes—viz., chronic catarrhal rhinitis, hypertrophic rhinitis, polypi, foreign bodies blocking up the middle meatus so that the secretions are retained within the sinuses, and finally giving way to the formation of pus.

In well-marked cases the diagnosis of abscess of the ethmoid cells is not a difficult matter; but in many instances the symptoms are obscure, and there is frequently an implication of one or more of the neighboring cavities, so that it is almost impossible at times to tell which is the source of the pus. Then we can arrive at a diagnosis only by exclusion.

Among the earlier symptoms of abscess of the ethmoid cells may be mentioned pain, neuralgic in character, referring to the bridge of the nose, increasing in intensity with the progress of the disease, and extending outwardly along the infraorbital ridge, and occasionally along the supraorbital ridge, as was observed in Case II. With a distention of the cells there is a sense of pain and pressure felt in the orbit, exophthalmia, a narrowing of the field of vision, and if there is softening of the bone at the inner angle of the orbit crepitation may be present. On rhinoscopic examination, if the abscess is of the open variety, pus will always be found in the middle meatus, and if the posterior cells are involved it will occasionally be found passing into the post-nasal space. The middle turbinated body may or may not be enlarged; this depends on whether it communicates directly with the ethmoid cells. In Case II this body was only moderately enlarged, while in Case IV it was about normal in size. The probe will in the majority of instances reveal carious bone when passed into the middle meatus and upward beneath the middle turbinated body.

While occasionally an abscess may exist in the frontal sinus without giving rise to any symptoms except a slight discharge of pus from the nose, as in the case reported by Luc (1), in the majority of cases the symptoms are very pronounced, and vary in intensity according to whether the fronto-nasal duct is open or closed. Pain in the frontal region, at first dull and then becoming lancinating in character as the secretions distend the cavities, is the most common symptom; there is pain on pressure over and under the supraorbital ridge; there may also be some redness and swelling of the skin over the affected sinus, which sometimes extend down and involve the corresponding upper eyelid. If the fronto-nasal duct is open, there will be a discharge of pus from that side of the nose, and upon rhinoscopic examination pus will be found in the middle meatus, just under the anterior extremity of the middle turbinated body. This is the variety of the disease that the laryngologist most frequently meets with. If, however, the duct should be closed, then there is a dilatation of the sinus, with a tendency to bulge at its thinnest part at the inner angle of the orbit on a level with the root of the nose, and it occasions a displacement of the eye forward, downward, and outward. If there is no relief, the pus finds its way through this swelling into the orbit in the form of an orbital abscess, or ruptures posteriorly into the cranial cavity. Besides the possibility of an orbital abscess forming, among the other eye complications may be mentioned changes in the corresponding papilla, generally a hyperæmia associated with dilated and tortuous veins and a narrowing of the field of vision.

Occasionally abscess of the frontal sinus is complicated with an abscess in the ethmoidal and maxillary sinuses, as was shown in Case IV. In this case the inflammation affected the deeper cells, or the fronto-ethmoidal cells, which are well illustrated in Fig. 1.

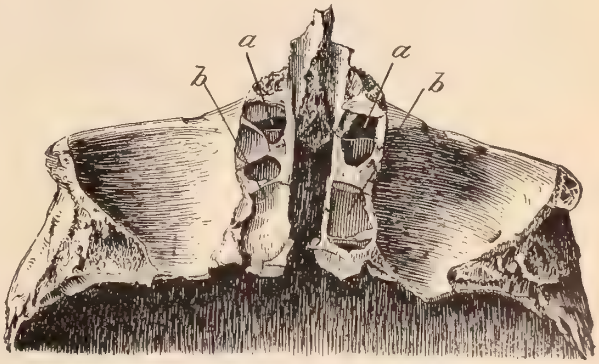

FIG. 1.—*a*, frontal sinus; *b*, fronto-ethmoid cells.

These cells are in close proximity to the frontal sinus, and in all cases of obstinate or prolonged suppuration in this cavity they are involved in the suppurative process. In Case IV they were undoubtedly involved, which fact would account for the recurrence of the inflammation in the frontal sinus after it had apparently ceased secreting pus. It was not until the disease advanced and the superficial cells became involved that ethmoid disease could be fully established.

Another interesting feature of this case is that after the inflammation of the maxillary sinus had been relieved, pus was found in this cavity coming from the frontal sinus, as is plainly evident from the fact that solutions injected into the antrum found their way out through the opening in the supraorbital ridge. This unusual condition can be explained in two ways: either there was a natural communication between the frontal and maxillary sinuses—an anomalous condition that I have previously called attention to, and which is shown in Fig. 2—or it was pathological, resulting from caries of the anterior ethmoid cells. The latter I believe to have been the case. This anomaly has been noticed also by others. The late Professor Leidy said that he had met with it two or three times, and MacDonald (2) states that Dr. Curnow, professor of anatomy in Kings College, has also met with the same condition.

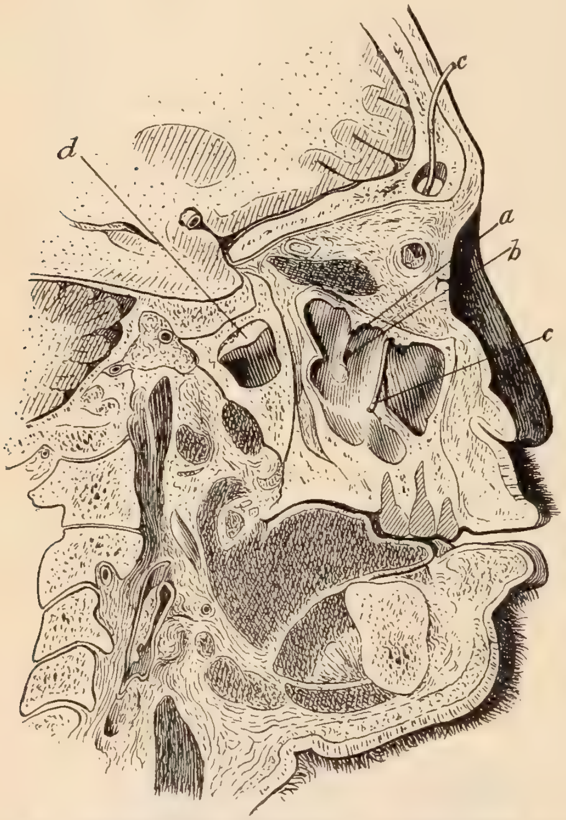

FIG. 2.—*a*, *b*, openings into the middle meatus; *c*, *c*, a probe passed from the frontal sinus into the antrum; *d*, sphenoidal sinus.

Fig. 2 shows the inner wall of the maxillary sinus, in which only two of the three openings into the middle meatus are visible.

The anterior or third opening, which is not shown in this view, is normal in position, but it communicates with a deep groove just in advance of the hiatus semilunaris which leads into the frontal sinus. By means of this groove it is possible to pass a probe from the cavity of the antrum directly into the frontal sinus, although, in so doing, it is made to enter the middle meatus first. The natural channel for pus or fluid coming from the frontal sinus would be into the antrum, in preference to the middle meatus. How often this anomalous condition occurs we do not know, but in all these cases of antral trouble which have apparently responded to treatment, but in which pus continues to accumulate, it is well to bear in mind the possibility of its coming from one of the sinuses situated above through a false or natural passage, as shown in the above figure.

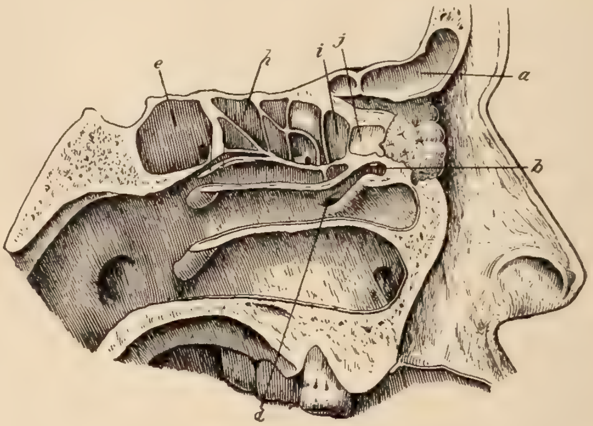

FIG. 3.—An antero-posterior section through the ethmoid cells, showing their relation to the frontal and sphenoidal sinuses. (Gouguenheim and Glover.)

In simple uncomplicated cases of suppurating ethmoiditis, after removing the cap of the middle turbinated body either with the snare or the electric burr, I prefer to continue the opening of the individual cells with a sharp curette, an instrument I consider safer than the electric

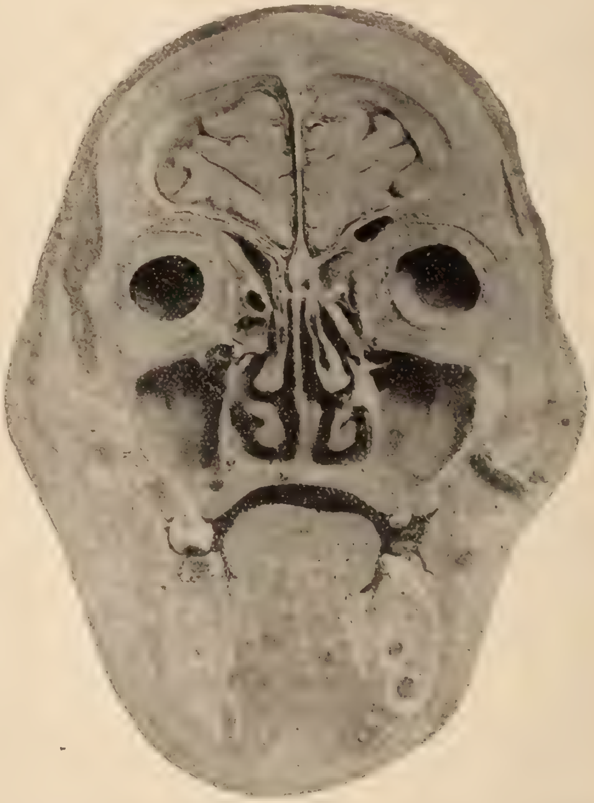

FIG. 4.—Cross section of a skull, showing a sectional view of the ethmoid cells and their relation to the orbital cavities and the middle turbinated bodies.

burr, for it must be borne in mind that this is a dangerous region, and if there is any undue amount of roughness used, or if the instrument should slip, there is the possibility of penetrating the orbit or the cranial cavity.

Fig. 3 shows very well the ethmoid cells with their thin bony trabeculæ, and also their relation to the frontal and sphenoidal sinuses.

Fig. 4—a cross-section of a skull showing a sectional view of the ethmoid cells and their relation to the orbital cavities—demonstrates the narrow space between the nasal wall of the ethmoidal sinus and the orbit.

In case the deeper or fronto-ethmoidal cells are involved, then we should not attempt to relieve them through the nose, although it was done successfully in Case IV, as the operation is not unattended with danger, but the case should be treated as one of frontal sinus abscess, of which this condition is a very frequent complication. The same object is to be sought in the treatment of abscesses of the frontal sinuses as in the other neighboring cavities of the nose—that is, to evacuate the pus and establish free drainage. In a few cases this can be accomplished, as in Case III, by removing any hypertrophy, polypi, or anything within the nose that serves to obstruct the fronto-nasal duct, when, if this duct is pervious, free drainage can be maintained, and the inflammation of the lining membrane, if not having existed too long, may subside and the patient eventually fully recover. If, however, the duct should be blocked, then an attempt should be made to pass a probe into it so that its permeability can be re-established. Sounding the fronto-nasal duct is by no means an easy procedure, and when possible it is more applicable in cases of mucocele than in cases of suppurative inflammation, and it prevents the former painful condition from being converted into the much more serious affection of abscess of the frontal sinus.

In the majority of cases of abscess of this sinus, if of long standing, it will be found necessary to make an artificial opening. The incision, after gently drawing the skin on the forehead, should be made along the lower border of the supraorbital ridge down to the bone, commencing just within the supraorbital notch and terminating on the nose; generally this form of incision will be sufficient, but in those cases where there is well-defined necrosis of the outer table of the bone, then the method of Panas (3) should be adopted—that is, of making another incision perpendicular to that along the supraorbital ridge, and the triangular flap thus formed is detached from the bone together with the periosteum, and the sinus perforated near the inner angle of the orbit. The opening should be sufficiently large to admit of a thorough exploration of the sinus with the finger and probe. Any osteophites or granulations must be removed with the curette. If the sæptum dividing the two cavities is not already broken down, a thorough exploration with a probe should be made to ascertain whether there is a perforation present through which the secretions could pass into the adjoining sinus. If pus should find its way into the adjoining cavity the sæptum must be broken down and the pus evacuated. In Case IV, the sæptum as far as could be ascertained, was free from caries when the sinus was opened, but during the course of the treatment it became ulcerated at the most dependent part of the sinus, thus allowing solutions injected into the left cavity to pass out through the right nostril. If the fronto-nasal duct should remain closed, or if the fronto-ethmoidal cells are implicated in the suppurative process, then a communication between the nose and this cavity should be established in order to permit of free drainage. This is best done by introducing the little finger within the nostril corresponding to the affected sinus, and then passing a curved trocar through the opening in the sinus into the nose, using the little finger as a guide. A drainage-tube is now introduced through the nose into the sinus, and also one in the outer opening, and allowed to remain until all suppuration has ceased. The cavity should be irrigated daily with some mild antiseptic solution, preferably a saturated solution of boric acid, and hydrogen dioxide.

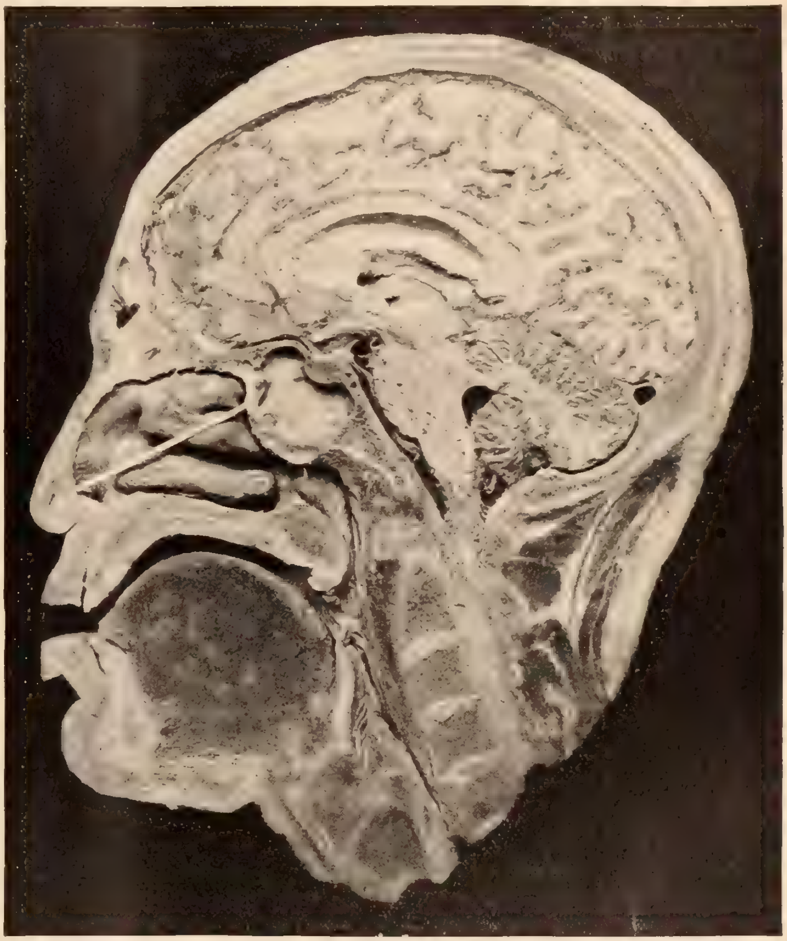

Fig. 5.—A sectional view of a skull, showing the distance from a point just within the nostril to the anterior wall of the sphenoidal sinus to be two inches and a half, as measured by a band graduated in half inches.

Suppurative disease of the sphenoidal sinus occurs much more rarely than it does in any of the other accessory cavities. While it does occur as an independent affection, it is more frequently observed as a complication of abscess of the ethmoidal sinus, where the thin bony partition, as shown in Fig. 3, between the posterior cells and the sphenoidal sinus is broken down and their contents discharged into the latter cavity.

Fig. 5 is an antero-posterior view of a skull showing very well the relation of the sphenoidal sinus to the superior and middle turbinated bodies.

Owing to the frequency of the implication of the frontoethmoidal cells in frontal sinus abscess, Jansen (4) recommends the removal of the under wall of the sinus. The same object is obtained in passing the trocar from the sinus into the nose. These cells are then drained directly into the nose.

The treatment of these cases will occasionally be found very tedious and discouraging, but if care has been taken to establish free drainage, and the antiseptic applications are thoroughly applied, the majority of patients will recover.

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2. *Diseases of the Nose*, 2d ed., p. 176.
3. *Archives of Ophthalmology*, vol. xx, p. 658.
4. *Archiv f. Laryngolog.*, etc., i, 2, 1893.

818 SEVENTEENTH STREET.

NERVE TERMINATIONS IN THE HEART OF THE RABBIT.

PRELIMINARY COMMUNICATION.

By WARREN COLEMAN, M. D.

(From the Loomis Laboratory.)

In the course of other work on neural histology, a portion of the left ventricular wall of the rabbit's heart, extending from the base to the apex, was cut into thin slices and dropped into the picric-acid solution (Berkley's method having been employed). It was done more as a control experiment than for any other reason, and I was surprised to find, upon examining the sections, that the results differed materially from those of Dr. Berkley and the observers he quotes.* It is for this reason that they are made public.

The size of the heart in the rabbit has prevented any attempt to trace out the distribution of the nerves. This communication will have to do only with their finer branchings and terminations.

The most important fact which this study has revealed is the penetration of the muscular fibres by the terminal nerve filaments. This penetration is distinctly and constantly shown in all the sections. The filaments are of variable lengths, and generally run toward the centre of the fibre. The differences in length may be partly due to an accident of cutting, for the filaments may be seen frequently to bend from their course. Some of them branch. They are of uniform size, and when examined closely are found to present a delicately beaded appearance.

In the majority of instances the filaments take origin from a plexus around the muscle fibres. These plexuses are peculiar both in their formation and distribution. They have undoubted ganglionic enlargements which occur chiefly among, but sometimes upon, the muscle cells. Figs. 1 and 2 have been selected from the more typical of these enlargements. If they are true nerve cells—and they present the appearance of being such—they exhibit an unusual feature in that the cell body gives off terminal filaments as well as its branches. These masses are stained so intensely black that it is impossible to distinguish any trace of nucleus. The openings which occur apparently in certain of these enlargements (Fig. 4) I take to be capillaries, about which the silver has been deposited.

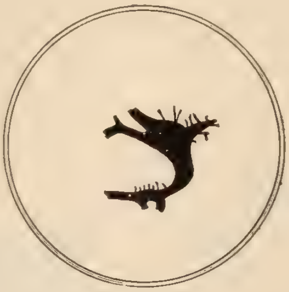
FIG. 1.

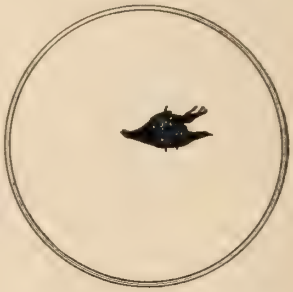
FIG. 2.

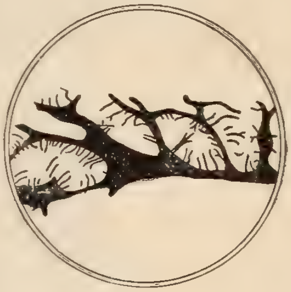
FIG. 3.

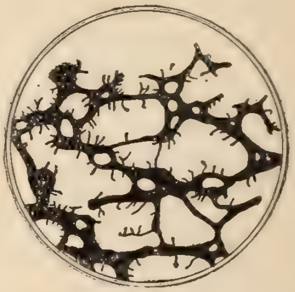
FIG. 4.

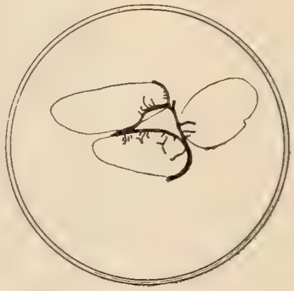
FIG. 5.

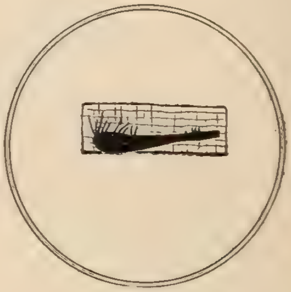
FIG. 6.

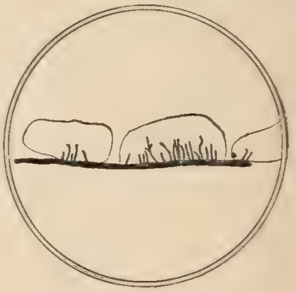
FIG. 7.

As a rule, the plexuses are long and narrow, extending for a distance of ten or fifteen muscle fibres (in transverse section), but surrounding only one or two rows of them (Fig. 3). In a few of the sections a very large plexus is found, of which Fig. 4 represents but about one fourth. Unfortunately, it is impossible to tell in what part of the ventricular wall it occurs. A delicate plexus, surrounding only two or three fibres, and possessing few or no ganglionic enlargements, is constantly seen in the sections (Fig. 5).

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* *Anat. Anz.*, ix, 1893, Nos. 1 and 2.

The filaments arise also from bulbous endings which are applied to the surface of the muscle cells (Fig. 6). These pear-shaped terminations are of infrequent occurrence, at least in the heart of the rabbit.

Lastly, single fibres which run among the muscle bundles and apparently have no immediate connection with a plexus send off terminal filaments which then penetrate the muscle cells (Fig. 7).

It would appear that all of the heart fibres are not supplied with nerves, and in this particular resemble involuntary muscle. The tissue has been very thoroughly impregnated, and many of the fibres have no nervous connections.

The foregoing statements are based upon the study of one hundred and fifty sections, and the penetration of the muscular fibre by nerve filaments has been confirmed twice in other rabbits and once in the dog.

All the drawings have been made with a *camera lucida* (Leitz ocular 3, objective 7).

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PRACTICAL POINTS IN THE OPERATION OF EXTIRPATION OF THE RECTUM.

By CHARLES B. KELSEY, M. D.

At least four days should be allowed in which to prepare a patient for extirpation of the rectum, in order to have the bowel as empty as possible at the time, and to postpone as long as possible the first fæcal evacuation afterward.

On the first evening three compound cathartic pills should be given, and these should be repeated on the second. The day before operating the diet should be exclusively milk and beef tea, preferably the latter, and, on the evening before, a dose of bismuth and morphine should be given. This should be repeated a few hours before the operation.

No preliminary preparation of the field of operation is necessary, but when the patient is under ether great care should be devoted to this point.

With the patient in the lithotomy position the perinæum is first shaved and the cavity of the rectum thoroughly cleansed as high up as possible. This is done through a speculum, at first by prolonged irrigation with bichloride solution (1 to 500), and then by carefully wiping the canal with wads of iodoform gauze on the end of long forceps. This is necessary, because it is often of the greatest help to be able to introduce the finger into the rectum during the operation, because the gut may be lacerated in trying to remove it, and because in every case it must be cut across before it is removed. In doing either of these three things the whole wound is apt to become infected unless the most scrupulous care is observed, and the object of the preliminary disinfection of the calibre of the gut is to reduce this risk as much as possible. The form of disinfection described may not be theoretically or practically perfect, but exactly in proportion to its thoroughness, and to the care with which the wound is kept clean during every stage of the operation, will be the mortality.

A small tampon of iodoform gauze may be left in the rectum, but too great a mass distends the canal, obscures palpation of the diseased part from the incision, and distorts the normal relation of the parts during the operation.

The patient is next turned on the face, or practically so, and the whole site of the operation scrubbed and disinfected. Soap and brush well applied, with subsequent washing with bichloride, and a final wash with ether will be found efficient.

The incision should be chiefly in the groove between the nates, and only in cases of unusually long incision need it be carried to the left of the median line at its upper limit. It should reach from the promontory of the sacrum to the anus, and the knife should be carried directly down to bone at once. Flaps should be turned to left and right by a few strokes of the knife hugging the bone; the flap on the right should lay bare that side of the sacrum, that on the left must be carried beyond the edge of the bone in order to expose the ligaments connecting it with the rest of the pelvis, and these should be divided.

A periosteal elevator is next passed under the sacrum from left to right (the operator stands on the left) at the level of the incision to be made across that bone, and is worked down to the tip of the coccyx, so as to separate all the soft tissues from the hollow of the sacrum. In this way the sacra media artery and the plexus of veins are lifted away from the bone, and troublesome bleeding during the rest of the operation may be avoided. When the periosteal elevator has been removed one blade of a strong straight bone forceps is slipped under the sacrum in its place and the bone is divided transversely, the piece cut off being immediately dissected out. Usually this triangular piece of bone should consist of the last two sacral vertebræ and the coccyx.

The work thus far done constitutes merely the preliminary incision, and should be completed in much less time than it takes to describe. Until after the end of the sacrum has been removed no attention need be given to hæmorrhage, except what an assistant can give by pressure of sponges. The bleeding will be mostly venous and not very severe; most of it will be found to have ceased by the time the bone has been removed. Should there be a steady, persistent loss of blood from just under the stump of the sacrum, it will be from the sacral plexus of veins and it may be very annoying. It may be controlled by the pressure of an assistant's finger, or by a long pair of forceps slightly curved, or by a ligature passed under it with a needle, but tying in the usual way without a needle is often impossible. Attention is called to this little point because it is often a troublesome one. When the rectum has been removed the bleeding will generally be found to have ceased spontaneously, but much time and many ounces of blood may be lost in unsuccessful efforts to ligature these vessels, when the pressure of an assistant's finger would save both.

The pelvis is now freely opened and the operation may proceed.

First the rectum should be isolated on each side by the finger. No cutting is necessary, as the gut will roll out of its bed with great ease to a certain extent; but the finger can not be passed completely under and around it on account of its size at this point, nor can it be drawn down at all on account of the firm attachments of the peritonæum and the mesorectum. Any forcible attempt to drag it down at this stage of the operation is attended by great risk of rupture and consequent soiling of the wound, and all that should be attempted is gentle isolation on each side by separating it from its loose attachments with the finger, and discovering by touch the extent of the disease to be removed, which can generally be easily done by palpating the tube as it lies in the wound.

The next step in the procedure should be the deliberate opening of the peritoneal cavity as near as possible to the bottom of the recto-vesical or recto-vaginal fold. This is not always quickly accomplished, as the peritonæum is often covered by a considerable layer of connective tissue, and this may be nicked several times at various points before an entrance to the free peritoneal cavity is effected. As the operator stands, unless he is ambidextrous, the most favorable point for opening into the cavity will be to the right of the gut, high up in the incision, as the gut is held over to the left side by an assistant. Care must be taken as the knife or scissors are used not to cut into the gut itself instead of into the subperitoneal connective tissue. When once the peritonæum has been opened the right index finger may be passed into the cavity, hooked under the gut from right to left and forced out of the peritonæum again on the left side of the gut, and into the wound. In this way the upper rectum surrounded by its peritoneal layer, with its torn margin which went to make the *cul-de-sac*, comes into the wound and the gut is freed from one of its strongest suspensory ligaments.

The rectum is now held from coming down only by the mesorectum, which binds it to the hollow of the sacrum, and, while gentle traction is made upon it with the index finger under it, as I have described, this last obstacle to its free descent may be cut away, but this, like every other step in the operation, should be done with precision and without violence.

It must be borne in mind that the nutrition of the upper end of the rectum after the removal of the disease will depend entirely upon the tissue which is now being cut, and this nutrition should be interfered with as little as possible. The bowel should not be forcibly stripped off from the mesentery and connective tissue, leaving it a mere tube without sources of nourishment, but the mesentery should be divided with scissors at some little distance from its attached border, so that any vessels coming from higher up and running parallel with the gut may be saved. Large veins may be divided between double ligatures to save blood.

The rectum has now been rendered freely movable, and the time has come to resect or amputate the diseased portion. By palpating the gut from without, the upper limit of malignant disease can easily be determined; with non-malignant ulceration it may often be necessary first to cut across the bowel above the strictured and thickened portion and then to remove successive sections till healthy mucous membrane is reached. Before dividing the gut a ligature of gauze or an intestinal clamp should be applied above the point of section, and the wound should be carefully protected with packing of gauze. The cut ends should be carefully wiped with pledgets of gauze and dusted with iodoform, and the upper one should be intrusted to an assistant who, by covering it with gauze and holding it out of the way, will keep from infecting the wound. The lower end held firmly by the operator must then be rapidly dissected from its remaining anterior attachments and either cut off below the disease or removed down to the anus. In most cases of disease within reach of the finger by rectal examination, the latter will be necessary, and the attachments of the levator on both sides must be cut by scissors or knife. Bold and rapid dissection at this stage will save much bleeding.

During all this part of the operation the constant danger of infecting the wound with the contents of the divided bowel must be scrupulously guarded against. Up to this time complete antisepsis is easy, but at this stage it is very difficult, and yet the life of the patient depends most certainly upon its being done successfully, for fouling of the wound with intestinal contents means high fever, prolonged suppuration, and a very high death-rate.

After removal of the diseased portion it should be carefully examined. At least an inch of healthy gut should always be removed above the upper limit of cancer, and in non-malignant disease the mucous membrane of the cut end of the upper segment should be rosy and healthy in appearance, and not purple and ecchymosed.

No hæmorrhage need be feared in dividing the bowel. Unfortunately, it is never too well nourished, and a bleeding vessel or two on section is always a good sign.

The operator will find he now has the whole pelvic cavity at his command. In women the tubes, ovaries, and uterus can be plainly seen and palpated. Several times I have removed tubes and ovaries at this stage of the operation, but unless their removal is very imperative I had rather not do so. The shock of an extirpation of the rectum may be more than the patient can bear without any additional traumatism.

The next point to be decided is what to do with the upper end of the gut—whether to bring it down to the skin and suture it in the perinæum, to suture it to any part of the rectum which may have been left below, or to bring it out in the middle of the skin incision and suture it just below the stump of the sacrum. This is always a delicate point, and, except in cases of disease high up, where a distinct resection and not an amputation has been done, and where some sort of end-to-end union is to be attempted, the location of the new anus will have to depend more upon the nutrition of the upper fragment than upon any preconceived ideas of the operator. If the loose end of the gut seems well nourished, and can be loosened from its attachments sufficiently to allow of its being stitched to the perinæum to form an anus in the normal place, it will be a great advantage. If, on the other hand, the segment is pale and bloodless on section, if, in order to get it down at all, the mesentery has been freely divided, it is much safer to bring it out behind under the cut edge of the sacrum and attach it to the skin, as was originally the rule in all cases. Of course an anus in the perinæum is much more satisfactory than one in the sacral region; but next to the danger of infecting the wound during the operation comes the danger of sloughing of the end of the gut after the operation, and infection of the wound from this cause, and it may easily happen that an operation will be fatal in this way which would have been successful had the operator been content with a little less perfect after-result. In cases of cancer, where all questions of future functional perfection are as nothing to the great one of prolonging life by removing the disease, it may be perfectly proper to disregard a minor point such as this and aim simply to save life at the least possible risk by forming the new anus in the sacral region. But in cases of non-malignant stricture and ulcers demanding excision the subsequent functional condition of the parts will prove a matter of more consequence. The surgeon may know he has as surely saved the life of such a patient as if he had removed a cancer, but the patient may not appreciate it, and may be tempted to compare his last state with his former, even though he may be cured of his disease and have gained greatly in flesh and strength. Therefore it is always better to bring the upper end down to the site of the natural anus when it can be done without too much danger of sloughing.

This point having been decided and the gut fitted to the position it is to occupy, and lengthened if necessary and possible to avoid tension, or shortened if more remains than is necessary for an anus in the sacral region, the toilet of the peritonæum may be attended to. This is much the same as in an ordinary laparotomy—hot douches with saline solution and sponging till all fluids are removed from the deep portions of the wound.

Should the operator prefer to close the opening into the peritonæum by a separate catgut suture, this should next be done. It is not difficult to find the ragged margins of what is left of the *cul-de-sac*, run them together by a continuous suture from below upward, and finally close the peritoneal cavity by stitching the edges of the torn peritonæum to the peritoneal layer of the bowel. I do not, however, consider this separate suture necessary. The end of the gut should next be stitched to the skin at the point decided upon, and all parts of the wound should be drawn together as carefully as possible by deep and superficial sutures. The cavity left by removal of the rectum is too large, however, for perfect apposition or for union to be expected by first intention, and a drain of aseptic gauze should be passed down to its deeper parts. Free oozing will always take place from the bed from which the anal portion of the gut has been removed, and this can best be stopped by a few deep sutures in the final closure of the wound. In fact, it often can not be stopped in any other way.

Usually a sharp rise of temperature—to 102°, or even 102·5°—may be looked for even in favorable cases at the end of the second day, but in those that are to do well this will subside in a day or two spontaneously, and the patient will make an uninterrupted good recovery. A successful case may be sitting up at the end of two weeks, and several of my own have returned to their homes at the end of three.

Nothing has been said about the various methods of end-to end suture of the extremities of the gut after removal of the disease, for the reason that it is seldom practicable. In the great majority of cases for which the operation is done none of the lower end of the rectum will be left except perhaps a small portion constituting the anus. In the cases where an inch or more remains, any form of suture or the Murphy button will generally fail, because of the feeble nutrition of the upper segment and the absence of a peritoneal covering to the lower. After two or three days the vast wound is then found to be full of fœtid gas, pus, and fæcal matter, and if the patient is fortunate enough to recover it is with a fæcal fistula in addition to the anus provided by the operation. Only in cases of disease high up in the rectum which has been removed with but little disturbance of the mesentery is careful end-to-end anastomosis indicated.

In cases where a fæcal fistula has resulted at some point in the line of incision secondary plastic operations are often successful. As a rule the gut itself must be dissected out and closed with Lembert's suture, and then the wound covered by suturing the skin and subcutaneous tissue. Closing the skin over the opening in the bowel without closing the opening in the bowel itself is seldom successful.

Many complications may arise during an operation for extirpation of the rectum. One of the most awkward I have ever personally encountered was to find a rectum absolutely devoid of mesentery and bound immovably to the hollow of the sacrum. All attempts to get it loose and bring it down resulted merely in stripping up one of the longitudinal bands of muscular fibres, and in the end I held in my hand six inches of stripped and injured gut which was entirely without any source of nutrition. As I was about to abandon the operation and turn the patient over for a left inguinal colotomy, it occurred to me to make use of a loop of large gut, probably the upper, freely movable part of the sigmoid, which during a great part of the time had been hanging freely in the field and occasionally getting in the way. This was drawn into the incision and stitched to the edges much as would be done in ordinary colotomy. It was then opened and the section between this opening and the end irrigated. Finally, the useless end of the gut was also stitched to the incision in the expectation that it would slough and come away, as it did. The man made a rapid and uneventful recovery.

This case might be used as an argument in favor of a preliminary inguinal colotomy in all cases of extirpation. No doubt certain cases now fatal from sloughing of the gut would be saved were a colotomy always done and the gut thoroughly emptied previous to the extirpation.

Another complication, though not a frequent one, may be found in the consolidation of all the perirectal tissue by inflammatory changes in cases of old, non-malignant ulceration and stricture. Under these circumstances the isolation of the rectum may be a matter of the greatest difficulty, and beyond the powers of the inexperienced operator.

Such in brief is the operation for extirpation of the cancerous or strictured and ulcerated rectum. The most casual reader will at once be struck by the fact that it is an operation of absolute precision, very different in character from the old one through the perinæum, in which a more or less blind plunge was made into the pelvis for a piece of the rectum, and in which the loss of blood depended almost entirely on the speed of the operator.

The operation described may be done by an experienced man in about forty-five minutes, and its mortality will depend much more on keeping fæcal matter and other intestinal contents out of the wound, both during the operation and the first days of healing, than upon the amount of shock.

My own first statistics showed the full death-rate of thirty per cent., but by attention to the details given above this has gradually been reduced until during the past winter I had but one death in thirteen cases, twelve of them being uninterruptedly successful.

SANITARIUMS
FOR THE TREATMENT AND PROPHYLAXIS OF PULMONARY PHTHISIS.

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(*Concluded from page 425.*)

Food, Alcohol, Garments.—I will now proceed to the question of food. Consumptives must be fed a great deal with abundance of nutritious substances—with meat, fat, and oil, milk, and fruit. The *menu* in the sanitarium should be much varied, and the patients should never have a diet exclusively of meat or of vegetables. Consumptives naturally have small appetites, and it requires often no little art to make them eat. But, leaving exceptional cases aside, such as absolute anorexia, hyperacidity, or the contrary, lack of gastric secretion, of which we will speak later, one usually succeeds in making the patients eat by persistent persuasion, and by offering them a variety of food arranged as appetizingly as possible.

The patients should eat four times a day at least. Here in Falkenstein they even eat six times.

In the morning—half past seven to half past eight o'clock—they have bread and butter and honey, with coffee, and two or three glasses of milk taken slowly in small swallows.

At ten o'clock there are bread and butter, cold meat, fruit, etc.

At one o'clock is the dinner—soup, fish, three kinds of meat, with vegetables, salad, preserves, dessert, and fresh fruit, with one or two glasses of wine.

At four o'clock they have a glass of milk with bread and butter.

At half past seven there are thick soup, meat and potatoes or rice, cold meat, bread and butter, salad, and cooked fruit, with again one or two glasses of wine.

At nine o'clock they take a glass of milk with two or three teaspoonfuls of cognac. To eat a great deal of butter is especially recommended, and milk is allowed at any time without restriction. Some patients drink twelve glasses a day or even more. Personally I do not approve of this, for it frequently causes indigestion and occasionally a chronic dilatation of the stomach.

Of course in other countries there are other customs. In Germany, where well people often eat five times a day, six meals are not too much for a consumptive. In France four meals are given, and the dinner is at night. But the principle is the same, "*suralimentation,*" overfeeding, in order to produce new tissue and give new strength.

A patient who has fever should eat when his temperature is lowest. In some exceptional cases of anorexia Debove's feeding tube may have to be resorted to, and in others one may be compelled to feed the patient exclusively on milk until it is possible to do better.

The patients should be taught to take their meals at regular intervals, eat slowly, and chew their food well.

The good condition of the teeth is, of course, essential, and a well-conducted sanitarium should not be without its dental chair, and should receive the regular visits of an experienced dentist. In short, everything should be resorted to to make the patients eat, for in this lies the secret of the success of the treatment.

Opinions in regard to giving alcohol to consumptives differ very largely, and it is extremely difficult to lay down any rule on this subject. My own experience has taught me that it is indispensable in some cases, but it should be given preferably in the diluted form of wine or beer, or good cognac in small quantities mixed with milk. It should rarely be given as an antipyretic remedy. When prescribed in the form of cognac or whisky it should be dealt out carefully like powerful and dangerous medicine.

And this is another advantage of treating the patients in a sanitarium, where they are seen several times a day, that the effect of the alcohol can be watched. The physician of a sanitarium, seeing his patients almost constantly, will soon be able to judge whether the improvement the patient may profess to feel after taking the alcohol is physiological or pathological (intoxication).

Patients take their hygienic bath regularly every week. They should dress sensibly and comfortably, according to the season. They should have warm but not too heavy outer garments for winter, which should not hamper their movements. To overcome the unpleasant pressure caused by the suspenders, to which the consumptive is more sensitive than others, this article of dress might be replaced by a sort of vest of light, elastic material, to which the trousers are attached, thus distributing the pressure over a larger surface.

For the ladies I would recommend the Jenness-Miller system of dress reform. They would derive much comfort and benefit by replacing tightly laced corsets and heavy skirts by some such sensible mode of dress, having the weight of the garments supported by the shoulders. If a corset must be worn, it should be corded or stiffened with a few whalebones, and never tightly laced, which, with the weight of the skirts, renders all abdominal breathing impossible. Abdominal breathing is in reality as natural to women as it is to men or to animals.

Of course, it is impossible to forbid fashion from entering a sanitarium with the ladies, but I agree with Professor Dettweiler, who does not allow any of his lady patients to wear trained dresses either in the sanitarium or on the grounds. Gentlemen are not allowed to lessen the purity of the atmosphere by smoking anywhere in the building.

The phthisical patients should keep their feet warm and dry. Rubber shoes when it is wet, fur-lined ones when it is cold, and hot-water bags or bottles at their feet when lying on their chairs in winter, should be recommended to attain this end.

Symptomatic Treatment.—The symptomatic treatment of pulmonary phthisis can not differ much in a sanitarium from what is done in ordinary practice.

Cod-liver oil and phosphates are sometimes given to build up the system.

As tonics I have seen arsenic, strychnine (nux vomica), iron, bitters, etc., employed.

Against the chronic feebleness of consumptives frequent massage with alcohol is recommended, and a few glasses of good, strong wine are given daily.

Fever is not always treated in the same manner. It often disappears shortly after the arrival of the patient in the pure atmosphere of the sanitarium, perhaps on account of the absence of streptococci in the air. The bacillus of tuberculosis is still in the system, but there is not the association of microbes which in impure atmospheres is one of the main ætiological factors of the fever of consumptives, especially of the hectic kind. In most sanitariums a moderate fever is first combated by the rest cure in the open air. If this does not succeed the patient is put to bed and absolute rest prescribed. If the temperature continues to rise, the ice bag over the heart is resorted to and the usual antipyretics administered. In some cases antiseptic inhalations are given (creosote or carbolic acid).

To prevent night sweats, the patient is rubbed all over with vinegar and water, or alcohol and water, besides taking his glass of cold milk with three or four teaspoonfuls of cognac before retiring. If these precautions do not suffice, the usual remedies—such as atropine, agaricine, etc.—are administered. But I have seen cases where all these means failed to control the hyperidrosis. I have then resorted to the following hydrotherapeutic measure, often with surprisingly satisfactory results. It can be done with very little inconvenience to the patient, and any intelligent nurse can apply it. Take a linen or cotton cloth of sufficient size, when folded once or twice, to cover the breast, back, and shoulders like a shawl; soak it in water at a temperature of from 54° to 50° F.; wring out the superfluous liquid, and apply the cloth rapidly to the thorax, taking care that the regions of the apex are well covered. A thick flannel band, somewhat wider than the compress, is then wrapped over this and fastened in place. The patient remains thus all night, sleeping well, as a rule, not disturbed by the heat caused by the double compress, and sweats but slightly if at all. In the morning the compress is removed and a dry friction administered.

To cough without cause, that is to say, when there is no expectoration, is not permitted in the sanitariums, especially not at meal times. The patients soon arrive at such a degree of self-control that coughing is rarely heard at the table, and then only when necessary. Newly arrived patients are informed of this rule in Professor Dettweiler's expressive words:

"If you have an itching sensation you don't scratch yourself in public. Well, to cough without expectorating is scratching the throat which itches; so please don't scratch your throat in public."

Against the incessant irritation of the throat a swallow of cold liquid is often sufficient; in some cases a half teaspoonful of a weak solution of codeine (one to two per cent.) is prescribed, to be taken at the approach of a coughing spell.

With apparently excellent results, Professor Landouzy, of Paris, injects a small hypodermic syringeful of sterilized water into the subclavicular or cervical regions, the patient indicating approximately the seat of the irritation.

For persistent and painful coughing expectorants are given when absolutely needed.

One is now and then called upon to relieve a dyspnœic condition, for which the inhalation of oxygen is most efficacious and rapid. A few balloons of oxygen should be kept on hand for this purpose.

Pulmonary hæmorrhages are treated in the sanitariums as they are elsewhere: by absolute rest in a half-sitting posture, ice bags over the heart and apex of the lungs, ligating the arms and lower limbs to prevent the blood from returning to the lungs, morphine or ergotine injected hypodermically, etc.

The physician will, of course, tell the patient not to be alarmed, as a hæmorrhage is only one of the phases of the disease, not necessarily lessening the chance of recovery. Timid patients who have never had a hæmorrhage should even be warned that this may occur.

Counter irritants, as a rule, are little applied in sanitariums, but, for my part, I should not like to dispense with them altogether. In many cases they are a well-indicated medication. A mustard plaster or the old-fashioned dry cups often give unexpected relief, especially when there are slight attacks of intercurrent bronchitis or pleurisy. We may not be able to explain the action of a counter-irritant, but we know it relieves the patient.

Consumptives usually sleep well in the sanitariums, the constant sojourn in the open air being an excellent hypnotic. The causes which most frequently disturb their sleep—coughing spells, and night sweats—I have already spoken of. For the nervous agitation which causes the wakeful nights of some patients, I have applied, with satisfaction, the wet pack, or gentle ablutions or spongings with moderately cold water over one member after the other without the patient's arising from the bed.

Now and then sulphonal, chloral, or morphine may become necessary.

One of the most difficult symptoms to combat is the chronic anorexia of consumptives. I have already spoken of persuasion; the physician can do much in this respect. I have also spoken of milk diet, and the possibility of being obliged to resort to Debove's feeding tube. Sometimes tonics, electricity, and abdominal massage are necessary. The following compound often seems to render good service as a tonic:

℞ Tinct. cinchonæ,
Tinct. calumbæ, } .... āā ʒ v;
Tinct. gentianæ,
Tinct. nucis vomicæ................ ʒ iij.

M. Sig.: Ten to fifteen drops in a little water before each of the principal meals.

A good preparation for excessive acidity of the stomach is, five grains each of salicylate of bismuth, bicarbonate of sodium, salol, or benzo-naphthol, to be taken before meals. To determine the exact cause of the dyspeptic condition chemical analysis of the gastric secretion is resorted to after a light trial meal. In undetermined troubles to wash out the stomach a few times often gives relief. Of course, dieting is the main thing for all digestive troubles. In some cases it is only necessary to teach the patients to eat slowly and chew their food well. A patient suffering from constipation should immediately report to the physician. Great effort during the act of defecation may bring about a severe hæmoptysis or cause the development of hæmorrhoids. Carlsbad salt and our California cascara sagrada are favorite remedies in the European sanitariums, when prunes and other fruits are of no avail. If the constipation takes a chronic character, abdominal massage is usually resorted to with good results. Dilatation of the stomach is treated, as elsewhere, by the dry diet so highly recommended by Professor Bouchard, of Paris, and others. Acute attacks of diarrhœa are treated by first cleansing the alimentary canal, and then giving the patient appropriate food, such as cocoa, toast, eggs, rice, mucilaginous soup, and Bordeaux wine with arrowroot. If the diarrhœa is due to tuberculous intestinal lesions the case is more difficult. Mere diet does not suffice, and even large doses of opium and bismuth have no lasting effect. Now and then a patient vomits during a coughing spell. The codeine solution or pills usually do good work by diminishing the spasmodic cough.

Educational Treatment.—The educational and mental treatment of the consumptive in a sanitarium plays a most important part. It is this portion of modern phthisiotherapeutics for which the Germans have adopted the French word "*entrainement*," and which we may call "the training of a patient."

We have already spoken of the prohibition of expectorating anywhere but in a spittoon and of unnecessary coughing. The reasons for these rules are explained to the patient on his arrival, and the first examination is as much to find out his mental as his physical condition.

Unless the patient appears very impressible he is usually told the true state of his disease. He must know how sick he is; but at the same time he is told that the success of the treatment is largely in his own hands, and the best of hope is held out to encourage him.

When the new patient is informed of the rules of the house he is also told that punctuality is expected of him at his meals, that he should present himself regularly in the consultation room, and carry out the physician's orders exactly. He is instructed how to avoid colds and other disorders. When taking his walk on a cold or windy day he should avoid conversation and breathe through the nose. He should never start out with the determination to go a certain distance in spite of fatigue. "*Tours de force*" are most dangerous for phthisical patients. Besides the regular examinations at certain intervals the patients are seen twice a day by one of the physicians, three times if they are confined to their beds. They should never leave the sanitarium on short absences for business or pleasure without notifying the physician. But the patient should be given to understand thoroughly that all these rules and regulations are only for his good, and made to feel that the sanitarium is a temporary home, from which he may go forth well and happy once more, and the physician and assistants, while apparently severe, are really his friends. The director of such an institution should also provide occasional quiet entertainments, such as concerts, theatricals, etc.

Besides the individual instruction there should be occasional short practical lectures at which the patients should learn the most important points of hygiene, especially that concerning pulmonary phthisis. In short, nothing should be left undone to make the patient's stay as pleasant and profitable as possible.

The physicians, as well as all those who have to do with the consumptives, should be animated by a high sense of duty, for while some patients are resigned and willing, others are very nervous and irritable, and much tact, forbearance, and kindness must be combined with a never-failing decision and firmness in dealing with them. Occasionally the physician will be asked advice in regard to heredity, marriage, pregnancy, etc. Opinions differ on these subjects, but, for my part, I think we may permit marriage to a phthisical patient who, after having left a sanitarium pronounced cured, as I have defined it above, has for two years felt not the slightest return of his trouble. That we should not consent to a consumptive's marrying while the disease is in full evolution is self-understood.

In regard to the influence of pregnancy, we may safely say that it almost always aggravates the disease. At the Maternity Hospital in Paris, in Professor Tarnier's service, I saw some very striking examples of the harmful influences of pregnancy on tuberculous women. The great teacher never failed to impress upon us the necessity of avoiding that condition with consumptives, or to insist that a tuberculous woman should never be allowed to nurse her infant. But when a phthisical woman has become pregnant, should we interfere with a view of saving her life by sacrificing that of the child? Statistics are not favorable to interference, and our great obstetricians are almost unanimous on this point.

When visiting the sanitariums I made inquiry as to the results obtained with pregnant tuberculous women by the hygienic and dietetic treatment. There were, of course, some fatal issues, but, as a whole, I was surprised by the results. There were quite a goodly number (for more complete statistics I must refer to my thesis) who had made excellent recoveries and borne apparently healthy children. But, of course, even in these cases the mothers were not allowed to nurse their offspring.

I have spoken somewhat at length of the treatment, general, symptomatic, and educational, but to defend myself against the reproach that I have been too minute, I may say that I have lived a great deal among consumptives, that I am living in the midst of them now, and that I have learned that to attend to all their little ills constitutes the great treatment.

On Health Resorts.—In speaking so much in favor of sanitariums, I do not, however, wish to have it understood that I think no tuberculous patient can be cured without entering such an institution. There are intelligent physicians and intelligent patients who between them could institute and carry out this treatment anywhere in a relatively pure atmosphere. But to do this the patient must be very well off financially.

In health resorts, no matter how beautiful the climate, if the patients are at liberty to do as they please, I affirm that all attempts at an effective cure are an illusion. In the great health resorts of the Riviera I have seen any number of consumptives promenading in the close, dusty air of the casinos, gambling, smoking, expectorating anywhere. At the *table d'hôte* they usually eat little, or what is not good for them. Now and then they see a doctor, whose directions they carry out only so far as they do not incommode them. Sometimes they do not go to see a doctor, but have some of the countless prescriptions filled of which they have brought along a supply from home. After a while, feeling no better, they leave, disgusted with the climate that has done them no good, and blaming the doctor who sent them there.

In the next resort the same thing is repeated; or they go to the mountains for a change. In some cases by the change of climate and outdoor life they really get better. They will then feel themselves privileged to make long excursions, climb mountains, or in winter skate, ride toboggans, or race on snowshoes. How dangerous such sports are for phthisical patients, even on the road to recovery, is too well known to need repeating here.

I am sorry to say that in our American resorts one too often sees the same spectacle.

I always had the conviction that these visitors, so careless with their expectoration, while often bringing wealth to such a locality, would also disseminate the germs of their disease. Curious to know if tuberculosis had really increased among the native inhabitants of these places since consumptive visitors had begun to throng there, I addressed letters of inquiry to the proper officials. Of the various answers I received, I will quote as a sample from a letter written by the distinguished Dr. Balestre, medical director of the hygienic service of the city of Nice. "It is of public notoriety," he wrote, "that Nice, and especially Mentone, have seen the number of their tuberculous patients increase in an enormous proportion since consumptives have frequented these resorts."

Bennett, of Mentone, had already observed this fact some twenty years before, but he explained it by the tendency of peasants to come to the hotels to serve consumptive visitors, thus enriching themselves more rapidly at the expense of their health. In this Bennett was certainly mistaken, for it is not dangerous to live with a tuberculous patient if proper care is taken of the expectoration. The breath of a consumptive is no more poisonous than that of a well man, and never contains any bacilli.

In marked contrast to these typical reports from Nice and Mentone come the statistics of Goerbersdorf. There is situated, besides two others, the oldest and largest sanitarium for consumptives, and the nurses and servants are taken almost exclusively from the native population. Nevertheless, the mortality from tuberculosis has *diminished* since the establishment of these institutions. To uphold this statement I reproduce the official statistics of the village of Goerbersdorf for a hundred years:

1790–1799	deaths from phthisis pulmonalis ..	14
1800–1809	" " " " ..	5
1810–1819	" " " " ..	9
1820–1829	" " " " ..	9
1830–1839	" " " " ..	8
1840–1849	" " " " ..	6
1850–1859	" " " " ..	7
1860–1869	" " " " ..	4
1870–1879	" " " " ..	5
1880–1889	" " " " ..	5

But these statistics become still more interesting when one considers that the population of Goerbersdorf has doubled in the last twenty-five years.

During his many years of service at the Brompton Hospital, London, Dr. Williams had not seen more than three or four cases among nurses or doctors where it seemed evident that pulmonary phthisis had been contracted, and this rarity led him to disbelieve the contagious nature of the disease. On my visit to the Brompton Hospital last year I very soon realized the true cause. The scrupulous neatness, the excellent hygienic condition, and the thorough precautions against infection from the expectoration make it almost impossible to contract the disease in that excellent institution.

In the presence of such facts no one will dare to say that the accumulation of consumptives in a well-regulated sanitarium is dangerous to the population of the district; on the contrary, the sanitarium is a place where the well are safe from all contagion.

The municipal governments of health resorts everywhere should realize the danger they are in, and enforce stricter hygienic laws and regulations in regard to their sick visitors.

And if there did exist a health resort where the hygienic conditions were perfect, should we send our consumptives there? Yes, we should send those predisposed to the disease, and those who are only relatively cured, who have no more bacilli, but still feel some of their old troubles and who have learned to be prudent. For them and from them there is nothing to fear. But for tuberculous patients whose disease is in full evolution, I repeat, with all conviction, the sanitarium is the best, the only place.

Sanitariums for the Poor.—It would be sad indeed if the privileges of a successful treatment for consumptives should be reserved for the well-to-do alone. Happily this is not so, and if the money spent for the poor consumptives who are nursed in our general hospitals until they die (since cures are extremely rare in these institutions) were used in the right direction, we might give all of them the same chance of recovery as the rich have. But I go still further. In what follows I intend to show that, by the creation of special hospitals and sanitariums for phthisical patients without means, first, the sanitary conditions of the general hospitals would be improved, and the possibility of one coming there with an acute disease being infected by a chronic consumptive would no longer exist; also many in the first stages of the disease would in a relatively short space of time be cured and instructed in the precautions to take not to infect others, and how to be prudent in their future life; finally, many hopeless victims now lingering in tenement houses, transmitting the germs of consumption to whole families, a burden to those who must support them, or to public or private charity, would then be gathered into these special institutions, where they would be better cared for with perhaps less expense.

When a laboring man is so unfortunate as to become phthisical, he will only go to the hospital after he has been sick for some time, unable to work for weeks. Often he has been lying ill at home, nursed by wife or children, until all savings are gone. Many will be induced only by absolute necessity to seek admittance into a hospital. Sometimes the hospitals are overcrowded, and the poor consumptive wanders from one to another, or has to wait until a bed is free. And when he has at last been received, what then?

In the general hospitals all over the civilized world phthisical patients are kept, not treated. There are enough remedies which might be given, but the physicians know they would do no good unless the patient was placed in better hygienic conditions. The pure air he needs so much he can not have. Should he ask to have a window open, his rheumatic neighbor would object. He must partake of the hospital food which, though it may be suitable for an ordinary stomach, is not so for him. As he has no appetite, he often goes without eating, his rheumatic neighbor being glad to get what he has left. He walks about if he is able, and does as he pleases. During the visit of the physician, if he is a great professor followed by a suite of students, he will often pass by the uninteresting case; if he is kind-hearted, he will address some comforting words to the poor consumptive, prescribe some cough mixture, or try some new remedy, to show his good will and his desire to do something for the apparently hopeless case. At night, if not kept awake by his own cough, the unfortunate tuberculous patient is disturbed by his neighbors, for a separate room can not be given him.

Such is the life of a poor consumptive in the average general hospital. In Paris one third of the hospital beds are occupied by phthisical patients who hardly ever leave cured. They usually stay some three months, and often longer. By consulting official documents I have found that in Paris 7,440 phthisical patients pass through the general hospitals every year, at a cost of 2,138,535 francs. No less an authority than Professor Grancher, who has been physician in the Paris hospitals for years, does not hesitate to declare that this money is spent almost without benefit to the patients. They all die; for even if, now and then, one leaves apparently better, he usually returns after a few months and remains until the fatal termination of his disease.

In other large cities the results are not better. Of those who have kindly replied to my letters of inquiry, Professor Schrötter, of Vienna, Professor Bäumler, of Freiburg, Professor Rosenstein, of Leyden, Professor Mosler, of Greifswald, Professor Immermann, of Bâle, and Professor Verdi, of Milan, report no cures among the thousands of consumptives received in the general hospitals. Professor Fürbringer, of Berlin, reports one or two per cent., and Professor Eichhorst, of Zurich, 4·6 per cent.

I am sure that American physicians will agree with me that we are not, on the whole, further advanced in this respect in the United States than in Europe.

If we wish to diminish the mortality from pulmonary consumption and check its spread, we must establish special hospitals, or, better yet, sanitariums, not only for the rich, but for the poor, with a moderate charge for those able to pay something, and entirely free for those who are not.

This project might not seem possible to realize, on account of the cost of keeping up such establishments. But would it be more expensive to treat consumptives in special hospitals and sanitariums, where they have fourteen-per-cent. chances of absolute cure and fourteen per cent. more of relative recovery, than in the general hospitals where they have next to none?

I will give a few statistics of the cost per diem of patients in the general hospitals of the large cities:

Paris	$0.63;
Berlin	0.65;
Vienna	0.55;
Bâle	0.70;
Milan	0.38.

In England and the United States the average is $1.00 to $1.20.

Now, what is the cost per diem of a patient treated in a sanitarium or special hospital? In the sanitarium for the poor at Ruppertshain, near Falkenstein, it amounts to sixty-one cents; in the Brompton Hospital, London, exclusively for phthisical patients, one dollar and twenty-seven cents;

in the Adirondack Cottage Sanitarium, Saranac Lake, New York, one dollar. I think these statistics speak for themselves.

I will now give a list, as complete as I have been able to make it, of the sanitariums for the poor already in existence and in course of construction.

In the United States.—Adirondack Cottage Hospital, Saranac Lake, New York; Sharon Sanitarium, Sharon, Mass.; Glauckner Sanitarium, Colorado.

In England.—Brompton Hospital, London; Royal Hospital for Diseases of the Chest; North London Hospital, Mount Vernon; City of London Hospital; Royal National Hospital for Consumption, Ventnor, Isle of Wight.

In Scotland.—Sanitarium of Craigleith, near Edinburgh.

In Ireland.—Sanitarium in Wicklow County, near Dublin.

In France.—Agincourt Sanitarium; a sanitarium at Magny.

In Germany.—Ruppertshain, in the Taunus; Reiboldsgrün; a sanitarium at Malschow, near Berlin; a sanitarium at Worms.

In Austria.—A sanitarium near Vienna.

In Switzerland.—A sanitarium in the Engadine; a sanitarium at Bern.

In Russia.—Obouchsowsky Hospital, St. Petersburg; Alexandria Hospital, St. Petersburg; sanitarium in Finland.

Besides these, the Parliament of Norway has decided to convert several hospitals into sanitariums for consumptives.

It is high time that the thousands of consumptive poor should be treated in a different way from what has been followed heretofore. It is a question of national welfare to cure the curable, and house the hopeless to prevent the spread of contagion.

But I may be told that there are too many poor consumptives for it to be possible to create a sufficient number of sanitariums—that the expense would be too great. I do not think so; on the contrary, a city or a State government would be the gainer in the end for having adopted such measures.

We could begin by transforming one or two of the best-situated general hospitals in each large city into special hospitals for consumptives, or even into sanitariums, by building verandas, partitioning the wards, etc. Then specially constructed sanitariums could gradually be erected in the country.

In the city special hospital, tuberculous patients should be admitted in whatever stage of the disease, and from there those for whom a change of atmosphere seemed specially indicated should be selected for the country sanitariums.

Since I think it is most essential that patients should be admitted in the primary stages of the disease, besides obliging those able to pay something to do so, the expenses could be somewhat further lessened by having those who are able do some of the lighter work.

Of course the physician alone should decide which patients should be given work to do, what kind of work it should be, and for how long at a time it should be expected of them. This should never be left to the hospital steward.

It is not at all necessary that a phthisical patient in the first stages should remain long in such an institution. What is needed just as much, and perhaps more than the actual treatment, is the training.

The patient needs to learn to put in practice the general rules of hygiene, and to know the precautions his individual case demands. He would leave the sanitarium not only cured for the time being, but equipped with the knowledge of how to avoid getting sick again in the future.

To each city sanitarium should be attached a special dispensary where former inmates could seek advice in case of intercurrent troubles.

To a large number my propositions will seem unrealizable; but I think I shall find just as many who will agree with me that it can be done. It must be done; our national welfare is at stake!

TWO SUCCESSFUL OPERATIONS FOR TRAUMATIC INSANITY;

*WITH REMARKS.**

By GEORGE W. CALE, M. D., F. R. M. S. London,
SURGEON TO THE WOMAN'S HOSPITAL;
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PROFESSOR OF SURGERY IN THE WOMAN'S MEDICAL COLLEGE, ST. LOUIS.

INSANITY due to injuries to the head is of rather infrequent occurrence. In twenty-two hundred cases of insanity treated by Kiernan forty-five were of traumatic origin, while Hays records sixty-one due to the same cause out of twenty five hundred cases. Thus it will be seen that about two per cent. were traumatic. Schlager (Upon the Mental Disturbances following Concussion of the Brain, *Zeitsch. der k. k. Gesellschaft der Aerzte in Wien*, xiii, 1857) reports five hundred cases of insanity due to concussion of the brain.

Causes.—Chronic meningitis and encephalitis play an important rôle in the production of traumatic insanity. These conditions not infrequently follow circumscribed inflammations of the vault of the skull. These circumscribed inflammations, or more properly congestions, result from blood-vessels weakened in vascular tone consequent on concussion. All injuries to the head—fractures, extravasation of blood, loss of brain substance, or mere brain concussion—work either as sole or contributing causes of insanity. Schlager found that injury of the bones of the skull makes resulting insanity more probable than injury to the soft parts.

Insanity often arises during or shortly after healing of the wound. In Schlager's cases nineteen developed within a year, while some developed much later, four patients showing no signs of insanity until after ten years. In these cases, as a rule, we have small local purulent foci or chronic processes in the dura, which later give rise to a spreading lepto-meningitis. We may also have exostoses, tumors, or caries of the skull from which hyperæmia and exudative processes progressively spread.

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* Read before the Mississippi Valley Medical Association at its annual meeting held in Detroit, Mich., September 3, 4, 5, and 6, 1895.

Injury to the skull, membranes, or brain, as well as the resulting influences, give rise to convulsions.

When insanity does not at once follow the trauma the intermediate stage is a period of cerebral irritation, which is caused by diffuse processes going on in the cerebral cortex; these may be periencephalitis, calcareous degeneration of ganglion cells, or sclerosis; or these conditions may be brought about through recurring congestion to which the injured brain is predisposed. Other causes of traumatic insanity are indurated cicatrices with adherent meninges. We may find also only a slight thickening of the bone or a circumscribed congestion of the meninges without adhesions. Schlager made ten autopsies, and reports the following, which may be found singly or in varying combinations: "Osseous cicatrices, adhesions of the dura, opacities and infiltrations of the lepto-meninges, more or less hydrocephalus chronicus, and granular ependyma"; in one case he found an area of sclerosis with brain atrophy and chronic inflammation of the lepto meninges.

Symptoms.—In some cases following injury to the brain symptoms due to cortical irritation, such as headache, fear, hallucinations, grinding of the teeth, or contracted pupil, occur. Most patients show after injury a tendency to congestion of the brain following the slightest use of alcohol. They manifest great emotional irritation and optic hyperæsthesia, such as photophobia and subjective light and color phenomena, and at times have amblyopia. These may be accompanied by motor disturbances, such as derangements of co-ordination and local paralyses. These symptoms are often remittent, and give place to great weakening of the psychical functions in general. In some cases we may have a return of health, but as a rule there is left behind a greater or less degree of psychical weakness due to chronic periencephalo-meningitis. The phenomena of the prodromal stage are great irritability, changes of character which are always for the worse, tendencies toward immorality and to vagabondism. The existence of these gives warning of the fatal outbreak.

Where paretic dementia develops later, we have brain exhaustion, weakness of memory andapathy, headache, vertigo, mental confusion, optic and acoustic hyperæsthesia—all symptoms of recurring brain congestion with irritation.

Fifteen patients of Schlager's had before and during the psychosis black scotomata which had a decided influence on the delusions. Ringing and roaring in the ears were common; in eighteen cases he found varying degrees of deafness; in three cases there were olfactory hallucinations and pupillary changes. Usually the disposition and mental traits became changed, thus foreboding the psychosis. In twenty cases brutality, increasing to violent outbreaks, was noted, along with ideas of personal importance; patients became prodigal, unthrifty, and restless. In fourteen cases there were attempts at suicide, impairment of memory, and mental confusion. Seven cases ended in paretic dementia. The outbreaks occurred periodically and manifested great irritability. The prognosis, as a rule, was unfavorable.

A trauma may be very important and yet produce no real mental disease, but makes the brain the *locus minoris resistentiæ*, and thereby more susceptible to disease. At present we have not a clear insight into the weakening influences of a trauma, but doubtless it interferes with the vaso-motors of the cerebral vessels and lowers their resisting powers. An acquired disposition shows itself in a tendency to fluxion, intolerance for alcohol; caloric influences in general aggravate and frequently make the brain easily exhaustible and predispose to great emotional irritability. The insanity may be produced, then, by any influence which lowers the vaso-motor tone and takes the form of mania, delusions of persecution, melancholia, general paralyses, etc.

CASE I.—A man, aged twenty-six years, a carpenter. The family history was good; no cases of insanity or serious nervous disorders had ever been present. The patient had always been healthy until June, 1885, when he received a blow from a club in the hands of a negro, the wound being about midway between the fissure of Rolando and the external occipital protuberance, slightly to the left of the median line. The wound was treated as an ordinary scalp wound, but not very successfully, as it suppurated for three months.

Four years after the reception of the wound the patient began to complain of severe pain in the left parietal and occipital regions of the head. He was extremely imaginative, and, as he expressed it, "everything went wrong." He thought his family and friends were plotting against him. About this time he began to have attacks of *petit mal.* His manner and disposition became greatly changed for the worse, which is almost invariably the rule in these cases; he was sullen, morose, and ungrateful. He would lie when it was decidedly to his advantage to be truthful, and he had a mania for stealing.

On October 17, 1888, he was sent to the Insane Asylum at Anna, Ill., where he remained sixteen months. At the end of that time his condition was somewhat improved, and he was accordingly discharged. On returning home he soon appeared in his old rôle, and after a trial of ten months the family was obliged to send him back to the asylum, where he was detained five months. He was again released, but only for one month. Four months later he was brought to me for treatment; this was in October, 1891.

The diagnosis of traumatic insanity was made and an operation advised. To this the family readily assented, but the patient objected vigorously, and tried to run away before the time set for the operation.

Operation.—The head was shaved, and the usual antiseptic precautions were taken. To prevent loss of blood, and also for the purpose of keeping the field of operation clear, a piece of rubber tubing was tied around the head, passing above the eyes and ears and below the occiput. I have found this to be a very useful time-saver, despite the objections of some authors, and have used it in a number of head operations without any ill effects. A large pear-shaped flap was made over the site of the adherent scar (the pedicle of the flap being downward toward the source of the blood supply); this was elevated with the periosteum, except a small portion which was attached to the bone at the site of injury. The bone was found to be somewhat depressed, as was also the corresponding portion of the internal table; a piece of the size of a silver quarter was removed; the dura appeared normal, although the depression of the internal table was quite marked. The wound was closed after the insertion of a few strands of catgut for the purpose of drainage, and the usual dressings were applied. The change in the patient could be noticed as soon as the effects of the chloroform disappeared; his headache had vanished and his manner was decidedly cheerful. His recovery was uninterrupted, and he left the hospital on the twelfth day. Since that time (nearly four years) he has held a responsible position on a railroad, and is to-day in perfect health.

This appears to have been a case of traumatic epilepsy complicated with moral insanity, and rather peculiar in not developing until so many years after the injury, and also in the absence of any pathological lesion, at least so far as we could determine macroscopically. It stands in marked contrast to the next case to be detailed, in which the insanity developed almost immediately after the inception of the injury.

Case II. *Acute Mania following a Trauma.*—L. F., a carpenter, aged thirty-three years, married; family history good. Father and mother, two brothers, and one sister living, all in excellent health.

On September 17, 1892, the patient received a blow on the top of the head about the interauricular line from a brick which had fallen about sixteen feet. He was in a stooping posture, and the blow, which was a glancing one, knocked him over. He was unconscious for about two hours. During the night he became delirious, got up, dressed himself, and started out with his gun. This delirium lasted the greater part of the night, but toward morning he became rational. The next evening he again wished to go hunting *in town.* He also insisted on sending his children to school in the late hours of the night. He had constant headache about the base of the brain, and a few days after the injury his sight became so affected that he had to be led to his physician's office. This condition lasted about four days. He had several attacks of mild mania, which were brought on by the least excitement.

He was extremely restless at night, and the administration of hypnotics had little effect. The operation was performed on October 30, 1892, and in the same manner as in Case I. There were no adhesions, but the dura was somewhat congested. On the morning following the operation the patient greeted me with a smile when I entered the ward, something I had not seen him do during the entire time he was unde, observation before the operation. He made a good recovery and is working at his trade daily.

The length of time which has elapsed since the operations fully warrants the statement that both patients have been entirely cured.

I have seen nothing in the literature of this subject relative to the site of injury in cases of traumatic insanity. It will be noted that both these patients were injured near the crossing of the interauricular and median lines.

4403 Washington Boulevard.

The Society of Medical Jurisprudence.—The special order at the next meeting, to be held on Monday evening, October 14th, is a paper by Dr. E. C. Spitzka, entitled A Needed Change in the Law relating to Suicide.

Changes of Address.—Dr. Ogden C. Ludlow, to No. 2309 Seventh Avenue, New York; Dr. Otto H. Schultze, to No. 166 East Sixty-fourth Street, New York.

THE
NEW YORK MEDICAL JOURNAL,
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A SEPARATE ACROMION PROCESS SIMULATING FRACTURE.

The October number of the *Edinburgh Medical Journal* publishes an article on this subject by Dr. John Struthers. The author remarks that, having met with this condition frequently in the dissecting room, he has been led to examine the exact anatomy of the part and to consider the causes that might bring about and maintain the condition. The exposed position of the acromion and its thinness in front of the beam that rises to it from the spine of the scapula would lead us, he says, to expect fracture of the acromion to be a more frequent occurrence than the statements in surgical text-books imply. There is evidence that true fracture of the acromion occurring at various places and in various directions is not infrequent, but it is overlooked from the absence of displacement. The condition in question, says the author, may possibly still come within the definition of fracture in the sense that it may, in some cases, have begun as a fracture of the layer of cartilage between the basi-acromion and the ossified epiphysis; and, in that event, the movements of the acromion against the clavicle may be sufficient to prevent union and to establish a joint between the two parts of the acromion. This, however, he says, is not likely to be the history in cases in which the separation exists on each side.

The relation of the clavicle to the acromion, says Dr. Struthers, is a fundamental consideration in the inquiry, as regards both true fracture and the condition in question. The normal anatomy, as bearing on that relation, has first to be considered; then the development of the acromion; afterward we are in a position to appreciate the distinction between the condition referred to and that of true fracture of the acromion. The condition of a separate acromion process, he says, however it may arise, is not without practical interest. In a case of supposed fracture, although the time for crepitus may be past, the condition may be recognizable in the living body by the amount of motion; and, if this is noticed some time after a contusion of the shoulder, a question may arise as to whether the contusion has been the cause of the supposed fracture. Again, the not infrequent association of the condition of separate epi-acromion with the condition of the shoulder joint usually called rheumatoid arthritis is of interest in its bearing on the question of the usual causation of the latter as well as of the former of these conditions.

With regard to the various forms of the acromion process, says the author, the general form of the acromion in cases of separate epi-acromion frequently appears to be unusual.

Aside from that condition the acromion varies much in form, and the following four types, between which there are intermediate forms, are described: 1. *The quadrate form.* The posterior angle is prominent and may approach nearly to a right angle, but it is generally somewhat rounded. The anterior end is square-cut, presenting an antero-external and an antero-internal angle; in some it is so sharply cut here as to make two angles of nearly ninety degrees; not projecting beyond the clavicle, but continuing the line of curvature of the anterior border of the clavicle onward to the antero-external angle, the most projecting part of the acromion anteriorly. The outer border is moderately convex and undulating if the tubercles are well marked. The inner border, behind the facet, is short, and forms either an obtuse angle or a concavity with the upper border of the crest of the spine. 2. *The ovoid form.* The posterior angle may be more rounded, but the chief character is the blunt-pointed projection of the anterior end beyond the clavicle. The facet thus does not reach to the fore part of the inner border. 3. *The triangular form.* The antero-external angle is deficient. 4. *The crescentic form.* The posterior angle and the antero-external angle are both deficient. In the last two types the outer border of the acromion is much bent.

The outer edge of the acromion, says Dr. Struthers, generally shows a series of tubercles with intervening smooth depressions, seen on the upper aspect and corresponding to the attachment of the intra-muscular tendinous septa of the deltoid muscle. The tubercles, besides the projection of the point and that of the posterior angle, are usually three in number.

Notes of specimens, with drawings, show the stages of ossification of the acromion process, the full particulars of which, says Dr. Struthers, are worthy of notice in relation tc the adaptations of the acromion and to the occasional occurrence of a permanently ununited epi-acromion. The earlier ossification of the epi-acromion is seen at its outer and inner sides rather than at the middle; at the outer, in relation to the attachment of the deltoid muscle; at the inner, in relation to the support of the clavicle. The accessory centre is seen, in one of the specimens, to unite by a narrow neck with the main part of the epiphysis, forming a kind of splint between the two. Should this union fail to take place, says the author, we have a precise explanation, if not of the cause of permanently ununited epi-acromion, at least of the form which it presents.

MINOR PARAGRAPHS.

THE *INDEX MEDICUS.*

In this issue we publish a list of subscriptions received by the publisher of the *Index Medicus*, Mr. Davis, from September 24th to October 8th, inclusive. A few of the names on this list have appeared in lists previously published by us, but most of them are new, so large a majority, indeed, as to encourage confidence that the medical profession has at last set itself seriously at work to revive the suspended *Index*. But it is necessary that additional subscriptions should be made promptly and in sufficient number to guarantee the success of the undertaking. We again urge those who are willing to subscribe to do so at once. Just as we are going to press Dr. George Thomas Jackson sends us the additional names of Dr. L. B. Bangs and Dr. B. Sachs, of New York.

ITEMS, ETC

Infectious Diseases in New Yerk.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 8, 1895:

DISEASES.	Week ending Oct. 1.		Week ending Oct. 8.	
	Cases.	Deaths	Cases.	Deaths.
Typhoid fever	29	7	34	9
Scarlet fever	28	2	30	2
Cerebro-spinal meningitis	3	1	2	2
Measles	63	3	34	3
Diphtheria	138	23	148	29
Small-pox	1	0	0	0
Tuberculosis	128	100	140	118

Subscriptions to the Index Medicus.—Mr. George S. Davis, of Detroit, has sent us the following list of subscriptions received from September 24th to October 8th, inclusive:

Albany, Dr. Henry Hun	$25
Alhambra, Cal., Dr. Milbank Johnson	25
Baltimore, Dr. Thomas S. Cullen	25
Boston, Dr. J. W. Elliot	25
" Dr. R. H. Fitz	25
" Dr. M. H. Richardson	25
Cleveland, Dr. W. H. Humiston	25
Colorado Springs, El Paso County Medical Society	25
London, British Medical Association	25
Louisville, Index Medicus Club	25
Nashville, Dr. J. H. Mills	25
New York, Dr. Robert Abbe	25
" Dr. S. T. Armstrong	25
" Dr. L. Duncan Bulkley	25
" Dr. D. Bryson Delavan	25
" Dr. Alexander Lambert	25
" Dr. Robert F. Morris	25
" Dr. Frederick Peterson	25
" Dr. R. W. Taylor	25
" Dr. G. Gilman Thompson	25
Philadelphia, Dr. John W. Crowskey	25
" Dr. Howard F. Hansell	25
" Dr. John H. Packard	25
" Dr. Hobart A. Hare	25
" Dr. Edward Martin,	25
Santa Barbara, Cal., Dr. R. J. Hall	25
Syracuse, Syracuse Academy of Medicine	25

A Concerted Study of Pathological Literature.—The students of the junior class in the medical department of the University of Wooster, in Cleveland, have organized a "Pathological Journal Club," which has for its chief object instruction in the methods of literary research by bringing the students into contact with the current literature bearing upon pathology and bacteriology in connection with their regular class-room and laboratory instruction in these subjects.

At the first meeting of the club, held on Thursday evening, October 3d, Mr. Morris Schott read his detailed translation of a paper upon The Ætiology of Rheumatic Tetanus, by Carbone and Perrero, which appeared in the *Centralblatt für Bakteriologie* for August 31st; Mr. J. J. Fleming read an abstract of Notes on Bacillus Coli Communis and Related Forms, by Theobald Smith, from the *American Journal of the Medical Sciences* for September, 1895; and Mr. R. G. Schnee gave an abstract of an article, by E. O. Jordan, On Some Conditions affecting the Behavior of the Typhoid Bacillus in Water, from the *Medical News* for September 28th. The club elected Dr. A. P. Ohlmacher president and Mr. A. L. Smith secretary. The meetings are to be held bi-weekly.

The Medical Society of the County of St. Lawrence, N. Y.—The semi-annual meeting will be held in Ogdensburgh, on Tuesday, October 15th, under the presidency of Dr. J. M. Mosher, of Gouverneur. The programme includes the following titles: Some Factors in Medical Education, by Dr. J. H. Brownlow, of Ogdensburgh; The Bicycle—its Use and Abuse, by Dr. A. C. Drury, of Canton; Hysterectomy—Indications and Methods, with a Report of a Case, by Dr. Silas E. Brown, of Ogdensburgh; The Comparative Merits of Medication and Hygiene in the Treatment of Disease, by Dr. Franklin D. Earl, of Morristown; The Summer Diarrhœa of Children, by Dr. S. W. Dodge, of Massena; Experiences in the Use of Antitoxine, by Dr. M. E. Smith, of Colton. Papers will also be read by Dr. Henry L. Elsner, of Syracuse, and Dr. P. M. Wise and Dr. Grant E. Madill, of Ogdensburgh.

The Erie County Hospital.—There will be four vacancies on the house staff of the Erie County Hospital, Buffalo, on November 1st. The term of service is eighteen months, half medical and half surgical. The average number of patients in the hospital is three hundred and fifty. There is a large maternity service, and a new building containing seventy beds exclusively for consumptives will be opened in November. Applicants must be graduates of a recognized medical college and must present the usual certificates as to character, etc. Full details will be furnished upon application to Dr. Francis Metcalfe, secretary of the medical staff, No. 329 Franklin Street, Buffalo.

The Canadian Medical Association.—Officers for the year 1895–'96 have been elected as follows: President, Dr. James Thorburn, of Toronto; vice-presidents (for Prince Edward Island), Dr. James Warburton, of Charlottetown, (for Nova Scotia) Dr. William Tobin, of Halifax, (for New Brunswick) Dr. W. W. White, of St. John, (for Quebec) the Hon. D. Marcil, of Quebec, (for Ontario) Dr. Fife Fowler, of Kingston, (for Manitoba) Dr. H. H. Chown, of Winnipeg, (for the Northwest Territory) Dr. G. Brett, of Banff, (for British Columbia) Dr. R. E. McKechnie, of Nanaimo; general secretary, Dr. F. N. G. Starr, of Toronto; local secretaries, Dr. H. D. Johnson, of Charlottetown, Dr. G. C. Jones, of Halifax, Dr. W. Christie, of St. John, Dr. J. G. McCarthy, of Montreal, Dr. John H. Mathieson, of St. Mary's, Dr. W. J. Neilson, of Winnipeg, Dr. George Macdonald, of Calgary, and Dr. W. A. Richardson, of Victoria; treasurer, Dr. H. B. Small, of Ottawa. The place of meeting in 1896 is Montreal.

The Late M. Pasteur.—The editor of the *Journal of the American Medical Association*, in an article that appeared in that journal for October 5th, recalls the appearance of Pasteur as he appeared in 1890 in his laboratory, in the famous institute erected during his lifetime as a perpetual monument to his greatness. The article continues: "A man of delicate frame, advanced in years, wearing a skullcap, with well cut gray beard, plainly dressed and modest in his demeanor. A thoroughly preoccupied student was our thought as we approached him. In the pleasant interview which followed, Pasteur was informed that the first steamer built by the United States Government for the Quarantine Service was named the Louis Pasteur. He simply expressed his thanks and bowed politely. Continuing the conversation, he was told that the second steamer for the United States Quarantine Service was named the Robert Koch. He became animated and said with much fervor: '*C'est bien fait.*' He evidently had great admiration for his German contemporary; there was not a tinge of jealousy. 'May I ask,' said Pasteur, 'what names you have chosen for the remainder of your quarantine fleet, as I understand from you that there are three more contemplated?' 'We shall honor our own countrymen next,' he was told. 'The third and fourth vessels will be named respectively the William H. Welch and the George M. Sternberg; the fifth is not yet named.' 'Again, well done,' said Pasteur, with interest. A hurried walk with the savant and a friend through the laboratory and the museum ended this visit, which, to the editor, will always be a fragrant memory and one of the pleasurable events of a lifetime."

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Thirty days ending September 30, 1895:*

Banks, C. E., Passed Assistant Surgeon. To proceed from Washington, D. C., to Vineyard Haven, Mass., for temporary duty. September 11, 1895.

Glennan, A. H. Passed Assistant Surgeon. Granted leave of absence for five days. September 3, 1895.

Wertenbaker, C. P., Passed Assistant Surgeon. Granted leave of absence for three days. September 3, 1895.

Houghton, E. R., Passed Assistant Surgeon. Granted leave of absence for twenty-three days. September 12, 1895.

Cofer, L. E., Assistant Surgeon. Granted leave of absence for seven days. September 3, 1895.

Fessenden, C. S. D., Surgeon. Granted leave of absence for thirty days. September 24, 1895.

Bailhache, P. H., Surgeon. Detailed to represent the service at the meeting of the American Public Health Association. September 24, 1895.

Gassaway, J. M., Surgeon. Granted leave of absence for one day (September 21, 1895), and for fifteen days. September 23, 1895.

Carter, H. A., Surgeon. Granted leave of absence for one day. September 24, 1895.

Brooks, S. D., Passed Assistant Surgeon. Directed to proceed from Chicago, Ill., to St. Louis, Mo., for temporary duty. September 16, 1895.

Williams, L. L., Passed Assistant Surgeon. Relieved from temporary duty at South Atlantic Quarantine and directed to rejoin station at Charleston, S. C. September 19, 1895. Granted leave of absence for twelve days. September 25, 1895.

Kinyoun, J. J., Passed Assistant Surgeon. Detailed to represent the service at the meeting of the American Public Health Association. September 24, 1895.

Stoner, J. B., Passed Assistant Surgeon. Granted leave of absence for thirty days. September 20, 1895.

Rosenau, M. J., Passed Assistant Surgeon. To proceed from Eagle Pass, Texas, to San Francisco Quarantine Station for temporary duty. September 16, 1895.

Cofer, L. E., Assistant Surgeon. Granted leave of absence for thirty days. September 23, 1895.

Nydegger, J. A., Assistant Surgeon. To proceed from Savannah, Ga., to Mobile, Ala., for temporary duty. September 16, 1895.

Oakley, J. H., Assistant Surgeon. Granted leave of absence for thirty days. September 30, 1895.

Society Meetings for the Coming Week:

Monday, *October 14th:* New York Academy of Medicine (Section in General Surgery); New York Academy of Sciences (Section in Chemistry and Technology); Society of Medical Jurisprudence, New York; New York Medico-historical Society (private); New York Ophthalmological Society (private); Lenox Medical and Surgical Society, New York (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Marion County, Fla., Medical Society (Ocala).

Tuesday, *October 15th:* New York State Medical Association (first day—New York); New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Kings, St. Lawrence (semi-annual, Ogdensburgh), and Westchester (White Plains), N. Y.; College of Physicians of Philadelphia (Section in Ophthalmology); Baltimore Academy of Medicine; Hunterdon, N. J., County Medical Society (Flemington).

Wednesday, *October 16th:* New York State Medical Association (second day); Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

Thursday, *October 17th:* New York State Medical Association (third day); New York Academy of Medicine; Brooklyn Surgical Society; College of Physicians of Philadelphia (Section in Gynæcology); New Bedford, Mass., Society for Medical Improvement (private).

Friday, *October 18th:* New York Academy of Medicine (Section in Orthopædic Surgery); Brooklyn Medical Society; Philadelphia Neurological Society; Baltimore Clinical Society; Chicago Gynæcological Society (annual).

Saturday, *October 19th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

John Law Campbell, M. D., whose decease, on September 22d, we have already announced, was born in Duanesburgh, N. Y., on March 7, 1824. He was graduated from Union College in 1845, and took his medical degree from the College of Physicians and Surgeons in 1850. Thereafter his life was spent in arduous professional work in New York, where he won a well-deserved reputation as a capable physician and as a courteous and kind-hearted gentleman.

Births, Marriages, and Deaths.

Married.

Powers—Lapham.—In Denver, on Saturday, October 5th, Dr. Charles A. Powers and Miss Katharine Newman Lapham.

Whitmarsh—Sprague.—In Providence, R. I., on Wednesday, October 2d, Dr. Henry Allen Whitmarsh and Miss Alida E. Sprague.

Died.

Hunt.—In Providence, R. I., on Thursday, October 3d, Dr. Henry F. Hunt, of Camden, N. J.

McLeod.—In Kansas City, on Friday, October 4th, Mrs. L. McLeod, wife of Dr. Alfred McLeod.

Rawlings.—In Richmond, Va., on Tuesday, October 1st, Dr. George C. Rawlings, aged seventy-eight years.

Tiffany.—In Binghamton, N. Y., on Wednesday, October 2d, Dr. Charles W. Tiffany.

Warner.—In New York, on Wednesday, October 9th, Dr. Frederick M. Warner, aged thirty-eight years.

Wilcox.—In Chicago, Dr. W. LeRoy Wilcox, aged thirty-five years.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Seventeenth Annual Congress, held at Rochester, N. Y., Monday, Tuesday, and Wednesday, June 17, 18, and 19, 1895.

The President, Dr. John O. Roe, of Rochester, in the Chair.

(Continued from page 342.)

A Case of Melancholia, dependent upon Ethmoid Disease, cured by Intranasal Operation.—Dr. F. H. Bosworth, of New York, read a paper with this title. (See page 449.)

A Case of Suppurative Ethmoid Disease followed by Invasion of the Sphenoidal Sinus, Abscess of the Brain, and Death.—A paper with this title was read by Dr. F. H. Bosworth, of New York. (See page 450.)

A Further Contribution to the Subject of Suppurative Disease of the Accessory Sinuses, with Report of Cases.—Dr. J. H. Bryan, of Washington, D. C., read a paper on this subject. (See page 450.)

Dr. Jonathan Wright said that the papers that had been presented on suppuration of the accessory cavities were exceedingly interesting, and the one by Dr. Bryan was one of the best that had ever been presented in this country. These cases were often very puzzling ones after operative treatment had been begun. Some years ago he had seen a case in the Woman's Medical College in which he had been unable to find any dead bone after the removal of some polypi. There had been four roots of decayed teeth in the jaw. He had supposed the case to be one of ordinary antrum disease. Under ether anæsthesia an attempt had been made to remove these roots, but in this he had failed. He had then inserted a heavy punch alongside of the roots, and, after perforating into the antrum, had succeeded in removing the fragments of the roots. The alveolar process had been so long that the Bosworth tubes had not seemed to reach into the antrum. He had then perforated the anterior wall of the antrum and inserted a drainage-tube into both openings. After three or four weeks the pus had ceased to flow from the antrum. Just as he was preparing to remove the tube and allow the opening to close, the discharge from the nose and the opening in the gum had become more abundant than ever. He had then etherized the patient again, and had made an opening of the size of a lead pencil into the antrum. Examination with a probe and electric illumination had been negative. The cavity had then been packed with gauze for several weeks, or until the discharge had ceased. But the discharge had returned after a short time. The patient had finally consented to a third operation. A long incision had been made parallel to the alveolar process, and the whole anterior wall of the antrum had been removed, so that the finger could be freely used in exploring the antrum. No pyogenic membrane could be detected, but at the apex of the antrum there had been some soft tissue, which had been curetted away. The antrum had been packed very thoroughly this time, and it had been kept packed for two or three weeks.

Since discontinuing the packing there had been little or no discharge from the antrum, but the patient had got into a sort of hysterical condition and was still complaining of more or less pain in the antrum. How much of this was neurotic in character it was hard to say.

He thought the tendency with many was to operate rather too early in these cases. At one time he had been called out at night to see a physician with profuse suppuration from the nose, and with considerable fever and constitutional disturbance. By transillumination a dark spot had been found. The physician had not wished to have an opening made into the antrum at that time, and after some delay the patient had recovered under simple washing out of the nose. Many of these cases of acute suppuration of the antrum had been seen within the past few years in connection with influenza.

Dr. **Ingals** said that he had been much interested in both papers, and particularly in the reference to suppuration of the sphenoid cells. During the last year he had seen three cases in which he had made this diagnosis, but he had had an opportunity of verifying this diagnosis in only one of them. He had, with the aid of a dental instrument, working at right angles from behind the palate, succeeded in perforating the sphenoidal cells on their inferior surface. With a trephine of ordinary size this could not be accomplished, because the instrument would slip on the oblique bone, but it could be done with a small trephine. After this had been introduced, the opening could be enlarged with a burr. In the case referred to, the patient had complained a great deal of burning pain from the burr, so that the opening could not be sufficiently enlarged. The opening had completely closed within two or three weeks. He had then had made a trephine about as large as a lead pencil, having a diamond-point drill running through the centre and projecting about an eighth of an inch beyond the cutting end of the trephine. With this he hoped to be able to make a large opening into the sphenoid cells without difficulty. He felt under obligations for the report of the case of melancholia, for he had a similar case to the one described by Dr. Bosworth. His patient had passed through the hands of many general practitioners and neurologists and he had removed a prominent spur from the sæptum without relief, but possibly some one of the many operations tried on Dr. Bosworth's patient would hit his case.

Dr. **Gleitsmann** said he wished to ask for information regarding an accident that had occurred to him in connection with opening the sphenoidal sinus. There had been an enormous discharge from the nasal cavities and also posteriorly. He had opened the sphenoidal sinus, and the patient had been relieved of the head symptoms. There had been a free discharge for seven days, and then he had been hastily summoned to the patient and had found a very profuse hæmorrhage. This had rendered an anterior and posterior tamponade necessary, and another tamponade after two days, owing to a recurrence of the hæmorrhage. He would like to know the experience of others in regard to the hæmorrhage occurring so many days after such an operation.

The speaker said that there could be no doubt about having reached the sphenoidal sinus if one had proceeded in a slightly upward direction between the sæptum and middle turbinated, about a fourth of an inch higher than the inferior border of the middle turbinated, and had proceeded to a depth of from three inches and a half to four inches. This method of opening the sphenoidal sinus had been very lucidly described by a European author—Dr. Max Schaeffer. In the chronic cases, the anterior wall of the sphenoidal sinus had been found to be soft. He always opened the sphenoidal sinus with a strong probe and not with a trephine.

Dr. **Shurly** said that it was well known that there were some cases of bulbar disease of the brain in which the olfactory bulb or nerves seemed to be involved. In these cases there was a reversion of smell as well as occipital and frontal headaches, and in some instances excessive discharge from the nose. He had looked upon this discharge as a result of neuritis secondary to the organic disease of the brain. He felt that any one in general practice meeting with cases of central brain disease would recall having observed this free discharge of muco-pus from the nose. He remembered very well a case of a tumor of the frontal lobes of the brain in which this had been a prominent symptom, and in which he had not been able to find any disease of bone.

Dr. **Daly** said that many would look upon the cure effected in Dr. Bosworth's first case as a sequence, but he felt that a still larger number would regard it as a consequence. He had had a very similar case in his own practice. With reference to opening the sphenoidal sinus, he would say teaching neurologists to enter the sphenoidal sinus with a burr drill was not so simple a matter as teaching children to put beans into their noses. He did not believe that in a given case where opening into the sphenoidal sinus was justified, it was good surgery at the present time to attempt to open it without first laying the nose to one side upon the face. This was not such a difficult or dreadful thing—it required only an incision along the posterior crease of the ala nasi and a cutting of the soft tissues of that and the cartilage of the sæptum, pulling the nose over to one side, and fastening it there temporarily with a hook during the operation, to be replaced *in situ* afterward. The scar left was unimportant if the crease line was followed.

This was perfectly justifiable in cases of such gravity as disease of the sphenoid. We all knew that no two measurements of the distance of this region were identical as given us to-day, measuring from the end of the nose, and, therefore, operating with such uncertain measurements as a guide was working merely by the "rule of thumb"—a very poor rule.

Dr. **Jonathan Wright** asked what the advantage was of laying the nose to one side; the nasal bones were still in the way, and would have to be sacrificed.

Dr. **Daly** replied that the sacrifice of some of these bones was of no consequence. He wished to be placed on record as having a desire to throw the light of day upon these operations rather than working in the dark by guess, as the measurements were absurdly diverse and in no sense a guide.

Dr. **Mulhall** said that it was no more dangerous to open the sphenoidal sinus than to open the ethmoidal cells, and we all opened the latter very frequently. The guard of the sphenoidal sinus was better than that for the ethmoidal cells. Apparently, very few of the members had read the work of Gruenwald. In this book were given many measurements or rules for reaching the sphenoidal sinus through the nose. Diseases of the sphenoidal sinus, apart from the ethmoidal cavities, were certainly very rare. He had had many cases of suppurative ethmoiditis, and had operated very freely with the burr, and with no serious results. In only one case had he discovered disease of the sphenoidal sinus uncomplicated with disease of the surrounding sinus. This case had occurred in a young woman with a history of a headache which had lasted about sixteen years. On passing a probe in the direction mentioned by Dr. Gleitsmann, bare bone had been found, indicating disease of the sphenoidal sinus. On gentle pressure the probe had entered the sphenoidal sinus. He had made many dissections to determine the correctness of the measurements alluded to. Several other physicians had investigated this case with him, and no ethmoidal disease had been found. After making the opening, the pus could be blown forward into the nose and aspirated into the pharynx. The opening had been enlarged with a curette, and kept open for a considerable time.

Dr. A. B. Thrasher said that the most interesting part of this discussion to him had been the first case cited by Dr. Bosworth. In the fall of 1891 a similar case had been brought to him from the insane asylum of Columbus, Ohio. Up to a few months before, this gentleman had been an active business man. The superintendent of the asylum, who had been a friend of the man's, learned that the patient had considerable frontal pain, and that he had complained for years of much nasal catarrh. Examination had shown anterior hypertrophy of the middle turbinated bone, with marked tumefaction of the adjacent wall of the sæptum. The hypertrophy was removed. After two weeks, the patient had returned to the insane hospital, and been discharged from there as cured. Three months later, he had come to the speaker on his way south on a vacation. Since then he had been engaged in superintending his large business. The speaker said that he had always hesitated to report this case, thinking that the result might have been a coincidence, notwithstanding the fact that the superintendent and the patient both attributed the cure to the operation on the nose.

Dr. Bosworth said that, while medical literature of late contained reports of a very large number of cases of sphenoidal disease, he was disposed to be somewhat skeptical as to whether this disease was so common as was supposed by many or as these reports would lead us to infer. Certainly a careful reading of the histories of many of these cases warranted the suggestion that cases of simple ethmoid disease had been reported as sphenoid. In several instances we had reports of the sphenoidal sinus being probed or curetted by an instrument inserted from two and a half to three and a quarter inches from the tip of the nose. Such a distance would carry the probe into the ethmoid cells and not into the sphenoid. In only two instances had the speaker ever probed the sphenoidal sinus, and in one of these a careful measurement had shown that the instrument, impinging upon the posterior wall of the sinus, had been inserted six and a quarter inches from the tip of the nose.

Dr. Ingals said it should not be at all difficult to measure exactly the distance to the anterior wall of the sphenoidal sinus. A probe could be passed back through the nares until it struck the posterior wall of the pharynx, and the distance of the wall of the sphenoidal sinus could then be measured by sliding something along the top of the probe, after the manner of a shoemaker's rule.

Dr. Gleitsmann remarked that he could feel when he was in the sphenoidal sinus, just as any surgeon knew when he passed a needle into any other cavity of the body.

Dr. Bryan said that he had not met with an independent case of sphenoidal abscess. A supposed case of this kind that he had seen previously had proved to be one of ethmoidal disease rupturing into the sphenoidal sinus. Another case had presented exophthalmia and other symptoms which had led him to conclude that the patient had ethmoid disease, and that the deformity of the eye was due to sphenoid disease. However, the patient had gone to another hospital, and had died there, and the post-mortem examination had shown a gummy tumor of the brain which had produced atrophy of the optic nerve. There had been some effusion in the posterior portion of the orbit, which had caused the exophthalmia. He was very glad, therefore, that he had not attempted to operate for sphenoid disease.

(To be concluded.)

AMERICAN NEUROLOGICAL ASSOCIATION.

Twenty-first Annual Meeting, held in Boston, on Wednesday, Thursday, and Friday, June 5, 6, and 7, 1895.

The President, Dr. Philip Coombs Knapp, of Boston, in the Chair.

(Concluded from page 280.)

Tumor of the Cerebellum was the subject of a paper by Dr. E. D. Fisher, of New York. The interesting feature of the case, he said, was the absence of any symptoms that could be directly referred to the cerebellum. There had been no inco-ordination or any staggering in the gait. The pain had been situated principally over the right orbit. The only well-defined cranial lesion had been that of the eighth nerve on the right side, with absolute deafness. There had possibly been a slight involvement of the seventh nerve on the right side, and the patient had said she had complete loss of smell. The general symptoms of a cerebral tumor—namely, headache, convulsions, and optic neuritis—had been present. A lesion at the base of the brain had been suggested by the cranial-nerve lesion, with involvement of the cerebellum; the absence, however, of cerebellar symptoms, and the localization of the pain so definitely over the right orbit, had led to an exploratory operation in that situation. The tumor had not been found at the time, but there had been complete relief from the pain and the convulsions until the time of death, eleven weeks later, which had been caused by a septic basilar meningitis. The autopsy had revealed a glioma involving the right cerebellar hemisphere. The operation had been by the bone-flap method.

Cases of Brain Tumor.—Dr. Preston, of Baltimore, related three cases of tumor of the brain, with autopsies. The first case had been that of a boy, aged thirteen years. For a year he had had what looked like ordinary epileptic attacks, which had been very much lessened by the use of bromides. Then he had suddenly been attacked with diplopia with some neuroretinitis. Vision had been greatly reduced, and there had been at first left lateral achromatopsia and afterward left hemianopsia. Gradually he had lost entirely both sight and hearing. The reflexes, both superficial and deep, had been lost. He had complained of most intense headache, and there had been gradual failure of mental power. The autopsy had revealed a large tumor involving the entire right temporal lobe; the occipital lobe had been found softened and broken down, but the cortical portion of the occipital lobe had not been involved. The tumor had been a sarcoma. The second case was interesting from the fact that the tumor, a small papilloma not larger than a partridge egg, had buried itself in the right superior occipital convolution, and had produced intense headache, with double optic neuritis. In the third case there had been a large sarcomatous tumor involving the temporal lobe, all except the first convolution, the greater part of the occipital lobe, and the lateral lobe of the cerebellum. The symptoms had not been very well marked except headache and mental disturbance. It was interesting to note, Dr. Preston said, that the first temporal convolution had not been involved, though the rest of the lobe had been virtually destroyed, and, in accordance with our accepted views concerning the auditory centre, there had deep deafness.

Dr. G. L. Walton, of Boston, presented a specimen, and said that the point of main interest was the question of whether an operation might have proved successful. The patient had been fifty-three years of age, and had complained of frontal headache only two months before his death. There had been attacks of vertigo, loss of speech, and several general convulsions. Aphasia, agraphia, right hemiplegia, and right hemianopsia had been present, also double optic neuritis and loss of superficial reflexes on the right side. The tumor had occupied the angle between the Rolandic and the Sylvian fissures. Extension forward under the healthy cortex had reached beyond the transverse frontal sulcus. It had been fairly well defined, but with no distinct capsule. The centre had been necrotic.

The symptoms had suggested so extensive an infiltration that an operation had been considered to offer small hope, but the extension backward had not been so great as the hemianopsia had indicated, a fact which, together with recently published cases of the removal of large infiltrating gliomata, would lead, perhaps, to a somewhat more hopeful prognosis in another case of this nature.

Dr. Starr referred to a case of infiltrating glioma in the arm area of the motor zone. The symptoms had developed in the course of a year—headache, optic neuritis, spasm of the right hand and of the arm, and, later on, paresis and loss of sensation. The operation had been by the curved-bone-flap method. The glioma had been very extensive and very vascular. It had been impossible to remove it safely, and death had occurred within a few hours. Dr. Starr mentioned also a case of suspected tumor of the corpora quadrigemina. A flap of bone had been removed from the parietal region and an attempt to puncture the ventricle had been unsuccessful. There had been no relief from pain. He thought that an operation under such conditions was useless. He agreed with Dr. Fisher that the situation of the pain was of no value in localization.

Dr. Dana said that the use of the chisel upon children and infants was a bad method of operation. He recommended the use of the improved revolving electrical saw, as used by Dr. Powell, of New York.

Dr. George W. Jacoby, of New York, had witnessed two operations upon adults in which the electrical saw had been used. He considered the method objectionable, as there had been more hæmorrhage, and a wedging of the saw had interfered with the operation. He spoke favorably of Quincke's lumbar puncture for the relief of intracranial pressure.

Dr. Dercum spoke in favor of a perpendicular burr worked by a dental engine.

Dr. Collins had seen a case where, after each series of blows from the mallet and chisel, the pulse had fallen from 60 or 70 to 35 or 40.

Dr. Dercum had noticed the same symptoms following the use of the chisel as described by Dr. Collins.

Injury of the Angular Gyrus from Fracture of the Skull.—This was a report of a case by Dr. C. Eugene Riggs, of St. Paul.

Hereditary Chorea with Autopsy.—This was the title of a paper by Dr. Charles L. Dana, of New York.

Dr. Mills looked upon the case as very important. It suggested the true explanation of a large class of cases (such as Friedreich's ataxia, hereditary chorea, and spastic paralysis), namely, that they were teratological.

Insanity and Phthisis; their Transmutation, Concurrence, and Coexistence.—Dr. H. A. Tomlinson, of St. Peter, read a paper with this title. He considered that phthisis and insanity were equally potent factors in the production of brain instability.

The preponderance of degeneration among persons having an heredity of phthisis was significant as indicative of the influence of phthisis in one generation and in determining a defective nervous system in the next, and his tables also indicated that the more direct the heredity the greater was the probability of transmutation.

Disease processes which were constitutional or diathetic attacked primarily one or the other form of tissue, with the result of progressive degeneration and disintegration if the tissue was epithelial. However, if the connective tissue was the seat of a disease process it either increased rapidly in amount and remained permanently increased or underwent liquification.

The commonest form of degeneration among the insane was of the connective-tissue type, or the premature and excessive manifestation of the changes which ordinarily occurred in senility.

The preponderance of imperfectly developed connective tissue in one generation implied the excessive development of functional tissue in the next, thus accounting for the transmutation of disease tendency. These changes were abundantly illustrated in the tuberculous and defective children of neurotic or syphilitic parents.

The Diagnosis of Pachymeningitis Interna Hæmorrhagica.—Dr. William N. Bullard, of Boston, read a paper with this title, in which he said that the pathology of the affection was as yet unsettled, although he believed the weight of evidence to be in favor of a non-inflammatory origin. There were several forms of subdural hæmorrhage, but his paper applied only to the apparently spontaneous, non-traumatic affection occurring in adults. The points of diagnosis between this condition and other forms of intracranial hæmorrhage were that the subdural hæmorrhage was peculiarly common in paralytic dements and in the chronic insane, and not rare in chronic alcoholics; that the onset was often more gradual than in ordinary intracranial hæmorrhage, and the irritative stage lasted unusually long; that the symptoms of irritation were prominent, and general epileptoid convulsions and localized convulsive movements were apt to occur; and that the peculiar rigidity occurring in one limb in connection with symptoms of hæmorrhage, and where no affection like tubercular meningitis existed, was very significant. The treatment in this condition was the removal of the clot. In all more serious cases this should be done as soon as the disease was recognized. The author reported a case in which an operation had been performed and the clot had been removed, although too late to save the life of the patient.

Dr. Tomlinson thought the term pachymeningitis was a misnomer. The primary condition was non-inflammatory. In syphilitic cases there were no signs of active inflammation, but changes occurred in the blood-vessels.

Dr. Fisher believed that the blood came from newly formed vessels which had resulted from inflammation, and asked what the special indications were for operative interference.

Dr. Bullard answered that an operation was indicated where symptoms of pressure existed. The question as to the origin of the disease remained *sub judice*.

Tabes and Multiple Sclerosis.—Dr. E. W. Taylor, of Boston, showed a patient suffering with the unusual complication of tabes dorsualis and multiple sclerosis. There had probably been syphilitic infection twenty years before. The patient had first noticed a tremor of the hands fourteen years before, followed by pain of a lancinating character in the legs and associated with general muscular weakness. There had been a gradual increase of these symptoms, with occasional paræsthesia of the legs. There had been the girdle sensation and difficulty in micturition, with loss of the knee-jerk, the Argyl Robertson pupil, lancinating pains, and disturbances of sensibility, making the diagnosis of tabes dorsualis unquestioned. In addition, there had been slight nystagmus, spasm of the posterior thigh muscles, muscular weakness, hesitating speech, and absolutely characteristic intention tremor, which had masked what little ataxia the patient had had.

Cerebro-spinal Syphilis.—Dr. Prince presented microscopical specimens from a case.

The Pathology and Morbid Anatomy of Amyotrophic Lateral Sclerosis.—This was the report of two cases, with autopsies, by Dr. Joseph Collins, of New York. After referring to the moderately constant clinical picture of amyotrophic lateral sclerosis and the variable pathological conditions on which they had been found to be dependent, he referred to the fact that the cases in literature which were well substantiated by autopsy were fewer in number than one might be inclined to think. Reference was also made to the different views held by the followers of Charcot and Erb on the one hand, and by those of Gowers, Leyden, and others on the other hand, as to whether the disease was primarily of the pyramids, with a secondary involvement of the anterior horns, or whether it was but a variation from the common form of progressive muscular atrophy. The first case had been that of a man, thirty-three years of age. The autopsy had shown atrophy of the ganglionic cells of the whole cord. Throughout the cord, but especially in the cervical and dorsal regions, there had been evidences of excessive vascularity, in the shape of large, thickened blood-vessels, especially in the gray matter and in spaces from which the vessels had dropped. In the cervical cord, corresponding to the place of apparent softening in the recent state, great disorganization of the ground substance of the anterior horns had been found. In the medulla there had been degeneration of the nuclei throughout the entire extent, with the exception of the extreme caudal end, also slight degeneration in the tenth and common vago-accessorio-glosso-pharyngeal nucleus. There had been no degeneration of the pyramids of the medulla. The root of the twelfth nerve had been small and delicate.

The second case had been that of a man, forty-eight years of age. A piece of cord from the cervical region, which had been placed in alcohol and had cultures made from it, had revealed the presence of the tubercle bacillus in considerable numbers. In the cervical region, degeneration in the crossed and direct pyramidal tracts, with almost complete destruction of the anterior horns, could be made out. In the dorsal region there had been sclerosis of the crossed pyramidal tracts, slight sclerosis of the ascending cerebellar tract, and diffusely distributed dilated blood-vessels, some with very much thickened walls. Extensive atrophy of the cells of the anterior horns had been observed, also some degeneration in the lumbar and sacral regions as in the dorsal region, but in a lesser degree. In the medulla there had been atrophic changes in the nucleus of the twelfth nerve. Hæmorrhage of old date in the dorsal region had been found.

Peroneal Muscular Atrophy.—Dr. William C. Krauss, of Buffalo, read the history of a case of muscular atrophy in a man, seventy-eight years of age, who, at the age of eighteen, had begun to notice a weakness of the leg muscles. This weakness had been accompanied by atrophy in the peroneal and hamstring muscles of both legs and had extended to the muscles of the thigh, the left thigh having been much more affected than the right. Double clubfoot of the pes varus variety had resulted and also a double genu valgum. The tendon reflexes had been absent on the left side, also on the right, with the exception of that of the patellar tendon. Fibrillary contractions and sensory disturbances had been entirely wanting. There had been present a lordosis and scoliosis of the lumbo-sacral region. The muscles of the upper extremities had been unaffected. The patient had given no history of any infantile disease, or of poliomyelitis, and had ascribed the affection to an accident. The patient had died of uræmia. Microscopic examination of the spinal cord had revealed atrophy of the anterior horns, especially on the left side, extending from the caudal part of the thoracic region to the conus medullaris. The multipolar cells of the antero-lateral group had been visibly affected, resulting in their disappearance, atrophy, or degeneration, while the median group had been less affected; the left side had been much more affected than the right. The white matter had been somewhat sclerosed, particularly in the antero-lateral and posterior columns, but not more than the age of the patient would warrant.

Dr. Collins remarked that, unless Dr. Krauss established that this had not been a case of chronic anterior poliomyelitis, it should not be accepted as one of the peroneal type of muscular atrophy.

Writers' Cramp.—Dr. J. W. Putnam, of Buffalo, reported a case of writers' cramp in a telegrapher. The man had previously had telegraphers' paralysis of the wrist, and later on the symptoms had increased to such an extent that the mere suggestion or thought of writing would bring on the spasm. The spasm, in addition to the arm muscles, had involved the trapezius and the sterno-cleido-mastoid of the left side. The result had been that when the man tried to write the hand would twist around to such an extent that he was unable to see the paper. The patient had been treated with hypnotism and deep muscular injections of atropine. The result after two months had been complete recovery.

Dr. Riggs stated that he had seen a similar case, but the trapezius had not been involved. Much relief had been obtained by the use of hyoscine hydrobromide.

Dr. Leszynsky asked whether the favorable result had been due to hypnotism or to atropine.

Dr. Putnam replied that he attributed the recovery to suggestion through hypnotism.

Dr. Smith Baker said that he had come to consider the associated contractions (those of the shoulder, head, etc.) as natural outcomes of the habitual attitude assumed by every one whenever he intended to do any particular thing whatever. They might be designated as associated intention contractions. The origin of these contractions undoubtedly dated back either to the time of learning to write or to some position incidentally assumed for comfort, etc. Their cure might come about through any means whereby the associations were broken up. Possibly writers' cramp itself was most frequently of purely psychical origin, and so rest or hypnotism, or any other sufficient psychical impression, kept up long enough, would result in recovery.

Automimesis.—This was the title of a paper by Dr. Smith Baker, of Utica, who defined automimesis as the process whereby impressions from the outside world or conceptions arising in the mind were first set as copy-models, and then automatically reproduced more or less indefinitely, until results detrimental or otherwise were attained. As usually considered, imitation meant the reproduction of features found in other individuals. Automimesis, or self-mimicry, meant the serial reproduction of characteristics dominant at some particular time in a person's mind. How such a copy-model first came to be set and subsequently followed was often a mystery. But a pain, or a shock, or a word, or muscular tension, or any unusual idea, or any incidental experience undoubtedly afforded the requisite suggestion—imitative impulse. This was often seen in the development of hysteria, neurasthenia, melancholia, insistent ideation, and in allied states and tendencies, while evidence was accumulating to show that the succeeding automimetic series was a quite natural outcome of such an imitative impression. Cases illustrating automimetic development of disease were given, and the conclusion was reached that possibly in this way there had been opened up points of view both as to ætiology and as to therapy which were of value to neurologists.

Obstetrical Paralysis.—This was the title of a paper by Dr. G. L. Walton, of Boston. He said that Carter assumed a stretching of the brachial plexus at a spot above the origin of the suprascapular nerve as the cause. This did not account for the escape of the branch to the pectoralis major, which passed off immediately below. The same difficulty presented itself in Oppenheim's theory of pressure against the clavicle. The author suggested that the suprascapular was probably bruised independently against the suprascapular notch or spine of the scapula, while the plexus below was bruised against the clavicle. The branch to the pectoralis major escaped in consequence of having no bony point of fixation. Probably rotation of the face away from the shoulder, which was caught at the brim of the pelvis, aided the stretching, as well as the drawing away of the head already described in this connection.

Book Notices.

The Care of the Baby. A Manual for Mothers and Nurses, containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease. By J. P. Crozer Griffith, M. D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania, etc. Philadelphia: W. B. Saunders, 1895. Pp. 3 to 392. [Price, $1.50.]

The influence which a book of this kind possesses is immeasurable, but it is an influence which may be either for good or for ill according as its contents are wise or foolish, for its readers are generally of the laity and, discrimination being therefore unlikely, its errors and its wisdom are alike taken as truth and blindly followed. Little danger will result from this confidence as reposed in Dr. Griffith's work, for it is full of that good common sense which the subject so strongly demands, and its arrangement and style are in an unusual degree valuable because of their simplicity. The volume is not free from errors; on the contrary, it contains many of them, but they are rarely momentous ones, and neither in quality nor in quantity are they sufficient to detract materially from the excellence of the work as a whole. One error is conspicuous, however, and that is "hedging," or the lack of decision. This may be noticed in several places in the book and is exemplified by the author's words upon the much-vexed question of "maternal impressions," for instead of such decisive words as those of Pye-Smith, "I would only deplore, in passing, how slowly superstition gives place to reason, the lamentable proof of which is afforded by the belief that nævi, cleft palate, and deficient limbs are due to what are called maternal impressions—a survival pardonable and even interesting when we meet with it among ignorant villagers, but without excuse when it occurs in a learned profession" (*Lumleian Lectures*, 1892), we are met by the assertion that "there is a possibility that such influences exist," and by its contradiction a few lines further on in the sentence "the various instances of maternal impression of which we so often hear are simply imaginary."

The author is ill advised in his advocacy of the "one-minute" thermometer, for, though the error from its use is seldom great, it is a well-established fact that the maximum temperature of the mouth is not reached in one minute or in two, following its closure, but more nearly in four minutes. Of the author's rules by which cream is to be obtained, it suffices to say that, however important they may be, they are seldom practicable. One thing in the book is deserving of special commendation, and that is the simplicity of the chapter on feeding. It is the fault of most books of this kind that they give a multiplicity of formulæ, directions, and preparations which are in no wise suitable for lay comprehension or employment. In contrast with these Dr. Griffith's words on this subject are clearness itself, and the comparison is all to his credit; moreover, his condemnation of patented foods is a delight, which is only lessened by his allowing "beef food." By "beef food" he means some of the proprietary preparations of beef. It would have been wiser had his condemnation also included these, and especially because alcohol in considerable quantity is not uncommonly one of their ingredients. That the wall paper of the nursery "ought not to contain colors made with arsenic" is an exploded idea, though there are some who never will be convinced that the explosion has taken place.

The portion of the book which deals with the diseases of children is most excellent, and from it the thoughtful and intelligent mother may learn much which will be to her advantage, though from its very inclusiveness it might become a cause of unnecessary alarm to the timorous. The paragraph on "spasmodic croup," however, is singularly erroneous, for it is nothing more or less than a description of acute catarrhal laryngitis or "catarrhal croup" under a wrong name. That laryngismus stridulus may complicate an acute catarrhal laryngitis in children is of course true, but to laryngismus stridulus, or "spasmodic croup," as a separate condition the author pays no heed. That the typhoid fever of childhood may be brief we grant, but to speak of the "usual three weeks'" course of that disease is incorrect, since four weeks is its more common duration. In speaking of diphtheria the author makes a strange mistake in saying that the contagium is contained in the breath, and of scarlet fever he gives a wrong impression by saying that the eruption does not appear upon the face. The face indeed often escapes the eruption, but not constantly enough to warrant the assertion made. To say that peritonitis produces "dropsy of the abdomen" is theoretically correct, for a condition of vascular obstruction by chronic peritoneal inflammation is conceivable which might result in dropsical exudation, but this condition is certainly uncommon, and in ordinary cases the fluid of peritonitis is inflammatory and not dropsical, while oftener there is little or no fluid. The impression that the author's statement would convey to the lay mind that the distended abdomen in peritonitis was due to dropsy is of course erroneous, for, as is well known, its cause is meteorism.

In some of the therapeutics the meaning is far from clear; for example, the assertion that "ichthyol is also a good application for sprains" is correct, but surely the author would not wish the mother to apply pure ichthyol because of his recommendation. In speaking of earache, too, it certainly is contradictory to say that "no poultice or other wet application" should be placed over the ear and in the next breath to recommend that the child be laid on the sound side and "water be poured into the affected ear, which should then be covered with hot *dry* flannel."

If some of our criticisms seem adverse, it is only because the errors of the book are striking. They are striking, however, by contrast, for the character of the work is otherwise of unusual excellence; moreover, none of these mistakes are vital, and we most frankly express our admiration for a book so sound, so clear, and so sensible, the occasional errors in which a second edition will doubtless remove.

La Méthode Brown-Séquard. Traité d'histothérapie. La Thérapeutique des tissus. Compendium des médications par les extraits d'organes animaux. Par le Dr. M. Bra. Ouvrage précédé de lettres et préfaces de MM. les Professeurs Constantin Paul, Mendel, Ewald, Bruns, Emminghaus et Byrom Bramwell. Accompagné de 72 gravures. Paris: J. Rothschild, 1895. Pp. xxxi–624.

The treatment of various forms of disease by extracts of animal organs is as yet in a nebulous condition. We are almost entirely ignorant of the capabilities, the limitations, and the manner of action of these remedies, and, though in some few diseases the success attending their employment has been startlingly brilliant, yet in other conditions the use of analogous remedies has been followed only by disappointment. Nevertheless the method seems full of great possibilities and doubtless the time will come when many an ailment will thus find its surest if not its only relief. In the mean time great care is required of all observers lest error result, for sensationalism, not to name it by a word more severe, is a besetting danger of this therapeutic method and many have fallen victims to it to their own misfortune and that of their theories. Disregarding those things which are unworthy, then, the medical profession has much of true scientific worth in this treatment with animal extracts of which it may avail itself. No more complete and satisfactory treatise upon the subject can be had than that of Bra. The work opens with a consideration of the methods of administering, of preparing, and of preserving the organic liquids. Consideration of the individual extracts is then presented in the following order: The testicular extract, the extracts of the ovaries, of the cerebral gray matter, of the thyreoid, of the heart, of the pancreas, of the liver, of the adrenals, of the muscles, of the kidneys, of the lungs, of the medulla of bone, and of the lymphatic glands. The consideration of these matters, though evidently the work of a believer in the method, is yet moderate and judicial. He attaches to the testicular extract a remedial value greater than that we believe in, and yet there are many who now regret their former skepticism and to some degree share his belief. To the extracts of gray matter and of kidney he ascribes a considerable value, and in the case of the latter the future he thinks may be brilliant. From the use of pancreatic extract he can report no brilliant success, a result which is quite in harmony with general opinion, but he thinks the testicular liquid of some value in saccharine diabetes. On thyreoid extract his conclusions are those now generally held. The work is valuable in that it presents what is now known of the therapeutics of animal extracts in a careful and well-arranged manner. To him who desires information upon this subject the book can not but be of service, for, though the work of a believer and an enthusiast, it is moderate and reasonable.

BOOKS, ETC., RECEIVED.

The Practice of Massage. Its Physiological Effects and Therapeutic Uses. By A. Symons Eccles, M. B. Aberd., Member of the Royal College of Surgeons, England, etc. London and New York: Macmillan & Co., 1895. Pp. xii–377. [Price, $2.50.]

A Text-book on Nervous Diseases. By American Authors. Edited by Francis X. Dercum, A. M., M. D., Ph. D., Clinical Professor of Nervous Diseases in the Jefferson Medical College of Philadelphia, etc. With 341 Engravings and 7 Colored Plates. Philadelphia: Lea Brothers & Co., 1895. Pp. xiii–17 to 1056. [Price, $6.]

The Theory and Practice of Counter-irritation. By H. Cameron Gillies, M. D. London and New York: Macmillan & Co., 1895. Pp. xii–236. [Price, $2.50.]

Mentally Deficient Children. Their Treatment and Training. By G. E. Shuttleworth, B. A., M. D., etc., Late Medical Superintendent of the Royal Albert Asylum, etc. London: H. K. Lewis, 1895. Pp. xiv–139.

The Adulteration of Drugs. A Lecture delivered before the Department of Chemistry of the Brooklyn Institute of Arts and Sciences, May 24, 1895, by Willis G. Tucker, M. D., of Albany.

Perforation in Enteric Fever; its Surgical Treatment. By Frederick Holme Wiggin, M. D. [Reprinted from the *Proceedings of the Connecticut Medical Society.*]

The Treatment of Postural Deformities of the Trunk by Means of Rapid and Thorough Physical Development. By Jacob Teschner, M. D. [Reprinted from the *Annals of Surgery.*]

The Treatment of Diphtheria by Antitoxine. By William H. Welch, M. D., of Baltimore. [Reprinted from the *Transactions of the Association of American Physicians.*]

Princeton Contributions to Psychology. Edited by J. Mark Baldwin Stuart, Professor of Psychology. [Reprinted from the *Psychological Review.*]

Vesico-vaginal Fistula. Suture of the Bladder with Catgut. By J. J. Brownson, M. D., of Dubuque, Iowa. [Reprinted from the *Medical News.*]

Flooding the Urinary Tract. By B. H. Daggett, M. D., of Buffalo. [Reprinted from the *Buffalo Medical Journal.*]

Miscellany.

The Length of the Small Intestine.—In the October number of *Mathews's Medical Quarterly* there is an article on this subject by Dr. Byron Robinson, of Chicago. The length of the small intestine, he says, has no special connection with the height, the weight, the age, or the obesity of the adult, but it has a general relation. In his investigations, the measurement of the intestine was taken while it was lying in the abdomen and still attached to the mesentery. By cutting the small intestine away from its mesentery, over six feet would sometimes be found added. A consideration of the varying length of the small intestine in the human being must be based on early infantile development. It was found that the adult intestine varied twenty-one feet and a half. The longest was thirty-two feet, and the shortest ten feet and a half. In measuring the small intestine of new-born infants, says the author, it was found that it averaged about ten feet at birth. It has been shown from autopsies on children that the small intestine grows rapidly immediately after birth. The reason of this is the mechanical irritation of the intestinal mucosa, which attracts large quantities of blood to the parts. The repeated reception of blood and the repeated attraction of rich blood to the mucosa excites peristalsis and also aids growth, and if a child has a large nervous system and large blood-vessels and rich food, the small intestine grows with astonishing rapidity. Treves, says Dr. Robinson, asserts that it may grow two feet in a month. Although this is a little more rapid, he says, than he has observed, yet the intestine will no doubt grow more than twelve inches in a month succeeding birth, and it is quite probable that in infancy and in childhood is the period of real intestinal growth. The proper time for the assimilation of appropriate food is in early infancy. If a child does not receive sufficient nourishing food, or is attacked with indigestion, he may lose the growth of several feet of small intestine in a few months. Perhaps a normal nervous system, with a normal vascular system and normal digestion, would produce almost a uniform length of small intestine. A man with a short intestine is not such a perfect assimilator as one with a long one, and, furthermore, a long intestine economizes food.

The position of the small intestine is not anatomically constant. Adjacent loops have no definite relations with each other. Two loops in contact may be adjacent or may be ten feet apart. The position of a loop in the abdomen gives no certain clew as to its exact position in the line of the bowel. Hence in intestinal surgery the position of the loop can not be relied on for distinct localization. In general the small intestinal loops are located in the left side of the colonic square. The coils consist of an irregular packet extending along the left lumbar region into the left iliac fossa and finally into the pelvis. These loops extend from the left transverse colon irregularly along the left side into the pelvis, like the frills of an old-fashioned collar. Not only do the coils of different individuals differ, but the coils of the same individual change position from time to time to accord with the passing gas and fæcal matter. It is well, in general, to remember that the small intestinal coils lie toward the left iliac region, as it makes a vast difference where a bullet penetrates an abdomen and which direction it takes as regards the coils of the small intestines. The author has shot some sixty dogs to test the effect of a bullet passing through the abdomen, with special regard to position. A bullet shot through the abdomen from side to side will frequently make from eight to twelve holes, he says, but if it is shot in the antero-posterior direction it may not cut a single hole in the bowel.

The loops of small intestines may extend over to the right of the vertebral column, and he has even observed a perforation in a loop of small intestine which lay over the pelvis of the right kidney from a tubercular ulcer. To secure the best view of the position of the loops of the small intestine, a spare cadaver with empty intestines, frozen, serves the best purpose. The shape of the small intestine is that of a truncated cone with its base at the flexura duodeno-jejunalis. The walls of the cone become thinner from the base to the apex.

The small intestine has two margins. One margin is concave and the mesentery is attached to it. Into this margin come all the vessels and nerves; and if this margin is shot away to any great extent gangrene of the intestine will follow. The other margin of the small intestine is convex. It is most distant from the renal neuro-vascular visceral pedicle, the mesentery. This border may suffer extensive injury without producing gangrene of the intestinal wall.

The variable position of the small intestines depends on variable forces, such as peristalsis, the emptying and filling of the stomach, bladder, and uterus, the development of gases, the filling and emptying of the rectum, respiration, the position of the body, and active movements and attitudes of the body. The emptying and filling of a large sigmoid flexure and cæcum would influence their position.

The measurements of the length of the intestine were performed on adult cadavers, just as they came, in the Cook County Hospital. There were one hundred and thirteen adult subjects measured consecutively; eighty-seven were males and twenty-six females. The intestines were measured without being removed from the body. One foot was allowed in every body for the duodenum. The average length in the one hundred and thirteen cases was exactly twenty-one feet. The longest small intestine measured thirty-three feet, the shortest was eleven feet. The highest variation was twenty-two feet, a variation equal to the length of a normal intestine. In the eighty-seven males the average length of the intestine was twenty-three feet and three inches. The longest was thirty-three and the shortest was twelve feet six inches. In the twenty-six females the average length of the small intestine was eighteen feet. The longest was twenty-nine feet and the shortest was eleven feet. These cases revealed that the male small intestine was five feet three inches longer than the female. The report would be in accord with the size and weight of the male and female body. But the result does not accord with that of other investigations. However, all these intestines were measured alike with no reference to the outcome. The number is of course insufficient to create a reliable base, and yet it shows the tendency of physical conditions as regards the weight and size of human bodies.

In regard to the length of the mesentery, says Dr. Robinson, the average of the hundred and thirteen cases was almost exactly seven inches. In eighty-seven men the mesentery measured seven inches; the longest was ten inches and the shortest was five inches. In twenty-six women the average was seven inches; the longest was eleven inches and the shortest was five inches. Generally the mesenteries begin to increase at forty years of age, perhaps at thirty-five years of age—that is, visceral prolapse begins at thirty-five and the mesenteries or visceral pedicles increase in length.

The measurements of the small intestine, says the author, show that in adults the length has no particular connection with weight, age, or height. But, in general, men being larger, the small intestine is generally longer than in women.

Asphyxia Neonatorum.—The *Journal des sciences médicales de Lille* for September 7th contains an account of a case which came under the observation of M. Bosvieux and M. David at the *Maternité*. The child was born at full term and weighed five pounds and a half. It was flabby and passed an abundance of meconium, and it did not present any vital manifestation. Auscultation and palpation did not reveal anything, and no movement was produced. After a vigorous flagellation, which brought no redness to the skin, M. Monestié, an interne of the service, thought he felt the heart beat, and he administered two injections of a third of a Pravaz syringeful of ether. At the same time he practised artificial respiration with alternate hot and cold immersions. The infant remained in the same condition and its lips became violaceous, but the heart beats were perceptible on auscultation. The authors then introduced Chaussier's tube into the larynx, and after an interval of fifteen minutes artificial respiration was again practised. The insufflations were made regularly at intervals of five seconds. The body became of a pale-red color, and the beating of the carotids and a rising in the hepatic region were seen recurring at regular intervals with the beating of the heart. Half an hour afterward M. Bosvieux injected half a syringeful of ether and continued the insufflations. Fifteen minutes later the child made a spontaneous respiratory movement; at the same time the pharyngeal reflex appeared. The first movement was soon followed by others. The cannula was then withdrawn, and the hot and cold immersions were begun again, also artificial respiration. Shortly afterward the child's body became pale, and rhythmic traction on the tongue was resorted to, but in spite of this the body remained pale and the mucous membranes became violaceous.

The tube was again introduced and insufflation practised, and in fifteen minutes a few spontaneous respiratory movements were noticed, which soon increased, and the pharyngeal reflex, which had disappeared, was observed. The tube, which was filled with mucus, was sponged out and again introduced to the depth of three inches below the dental arch, and a little bloody mucus was drawn off. About an hour later the spontaneous respiratory movements alternated with the insufflations, the heart beat regularly, the inspirations were deep, and the expirations were made by contractions of the diaphragm. At that time the child would clasp its fingers around any object placed in its hand, and made several movements with the arms. The heart beats were 97 and the respirations 26 a minute. The child was then wrapped in cotton and placed in a cradle with bottles of hot water around it. Inhalations of oxygen were given every ten minutes for an hour. The child's condition remained the same for the next two hours, when it was given a few teaspoonfuls of milk, the greater part of which ran out of its mouth; but the respirations continued. Half an hour afterward, however, the child ceased to breathe, the heart did not beat, and respiration was suspended. Fresh attempts at inhalation and artificial respiration had no results whatever, and some milk mixed with a little blood ran from the nostrils.

At the autopsy the author found at the opening of the buccal cavity a bloody magma formed by clots of the milk in the back of the throat and covering the epiglottis. The larynx presented a double ecchymosis on each side of the upper vocal cords, and another about four centimetres in extent occupied the anterior part of the trachea. In the bronchial tubes some bloody froth was found; the lungs were normal, crepitant on pressure, and showing some blebs of emphysema in front and to the right in the middle lobe. The liver and the spleen were congested, and the stomach and the œsophagus were empty. An examination of the brain showed that the sinuses and the veins were filled with blood. The left parietal region had been the seat of a hæmorrhage of about the size of a franc. There had also been a punctiform hæmorrhage on the surface of the protuberance, and the bulb, which was violaceous, presented a hæmorrhagic spot analogous to the right posterior part, on a transverse section near the calamus.

The ether, say the authors, produced an energetic action on the child's heart, and it had been eliminated afterward by the respiratory channel, as each inspiration of the child had shown. The insufflations had given here a favorable result, when the procedure recommended by M. Laborde, and the baths, seemed on the contrary to do away with the good effects obtained from the beginning. Perhaps, say the authors, if they had persevered with this treatment, they might have been able to obtain good results, but they preferred to resort to a method of action which had succeeded in the beginning. The death of the child appears to have been the result of premature alimentation; no movement of deglutition had been accomplished and the milk had formed, in the shape of a clot, an obstacle to respiration. It is probable, however, they say, that the lesion ascertained at the bulb near the mouth of the calamus would have caused death sooner or later.

In another case of this kind the authors say that they would not hesitate to resort to the same treatment, being careful, however, to wrap the child in cotton sooner than was done in this case. It would be well also, they think, to keep the cannula in the trachea for insufflation as much as possible, taking care to avoid a traumatism, which is so easily produced and so dangerous in this region.

The New York State Medical Association.—The twelfth annual meeting will be held in New York on October 15th, 16th, and 17th, under the presidency of Dr. Austin Flint. The programme mentions the following titles: A Clinical Report on Orthopædic Surgery, by Dr. S. E. Milliken, of New York County; A New and Original Method of Obtaining Material for Skin Grafting, by Dr. Zera J. Lusk, of Wyoming County; A Domestic Test for Albuminous Urine, by Dr. John G. Truax, of New York County; Brief Comments on the Materia Medica, Pharmacy, and Therapeutics of the Year ending October 1, 1895, by Dr. E. H. Squibb, of Kings County; The Present Status of Obstetrics, by Dr. Henry McM. Painter, of New York County; a discussion on The Prevention of Tuberculosis, by Dr. Hermann M. Biggs, of New York County; Milk as Supplied to Large Cities; the Sources and Nature of its Contamination, by Dr. Leroy J. Brooks, of Chenango County; Recent Studies of Diphtheria and Pseudo-diphtheria, by Dr. William H. Park, of New York County; Some Unusual Cases of Orbital and Intraocular Tumors, emphasizing the Necessity of Careful Differential Diagnosis, by Dr. Charles S. Bull, of New York County; Notes on the Diagnosis of Interstitial Cerebritis, by Dr. Neil J. Hepburn, of New York County; The Emergency Treatment in Acute Diseases of and Injuries to the Eye, by Dr. John E. Weeks, of New York County; A Study of Ocular Motility; its Physiology and Pathology, by Dr. Alvin A. Hubbell, of Erie County; an address in medicine: The Practice of Medicine in the Light of Bacteriological Researches, by Dr. A. A. Smith, of New York County; Empyema of the Antrum, by William Carr, D. D. S., of New York County; General Suggestions regarding the Diagnosis and Treatment of Acute Aural Inflammation, by Dr. Edward B. Dench, of New York County; A Case of Carcinoma Ventriculi, with the Continued Presence of Free Hydrochloric Acid and the Absence of Lactic Acid, by Dr. Charles G. Stockton, of Erie County; Post-febrile Insanity, by Dr. Charles W. Pilgrim, of Dutchess County; The Condition of the Heart in Anæmia as an Index to the Therapeutics, by Dr. DeLancey Rochester, of Erie County; Foreign Bodies in the Œsophagus, by Dr. H. M. Silver, of New York County; A Case of Extra-uterine Pregnancy—Death of the Fœtus—Unusual Complications, by Dr. George E. McDonald, of Schenectady County; Cases of Atresia and of Stenosis Vaginalis in the Non-pregnant and Pregnant States, with a Hundred Tabulated Cases in Labor, by Dr. J. J. E. Maher, of New York County; discussions in surgery: The Prognosis of Malignant Tumors as Modified by their Management, by Dr. Joseph D. Bryant, of New York County; The Nature, Modes of Propagation, and Commoner Sites of Tumors, to be discussed by Dr. Hermann M. Biggs and Dr. Edward K. Dunham, of New York County; The Early Detection and Prompt Ablation of Tumors, to be discussed by Dr. John W. S. Gouley and Dr. Charles Phelps, of New York County; The Means of the Eradication of Tumors—The Knife *versus* Caustics, to be discussed by Dr. John D. Rushmore, of Kings County, and Dr. Parker Syms, of New York County; The Necessity of Complete Extirpation of Tumors, and the Importance of Rapid Cicatrization of the Wound, to be discussed by Dr. Frederic H. Wiggin, of New York County; The Value of Subsequent Constitutional Treatment, and of Long Surveillance of Every Patient after the Operation, to be discussed by Dr. Frederic

S. Dennis, of New York County, and Dr. E. D. Ferguson, of Rensselaer County; the Management of Cases of Recurring Tumors—Indications and Contra-indications of Repeated Operations, by Dr. Stephen Smith, of New York County; The Indications of Non-operative Local Treatment—The Therapeutic Value of Toxines, by Dr. W. B. Coley, of New York County; Observations on the Minor Degrees of Contracted Pelvis, by Dr. Austin Flint, Jr., of New York County; the president's address: The Coming Rôle of the Medical Profession in the Scientific Treatment of Crime and Criminals; Suppurative Pancreatitis, by Dr. James K. King, of Schuyler County; A Study of Hysteria and Hypochondriasis, by Dr. Charles E. Lockwood, of New York County; The Technique of Maunsell's Method of Intestinal Anastomosis, by Dr. Frederick H. Wiggin, of New York County; A Review of the Treatment and Results in Nine Cases of Fracture of the Neck of the Femur, by Dr. Douglas Ayres, of Montgomery County; Disease of the Ankle Joint, by Dr. Thomas M. Ludlow Chrystie, of New York County; Some Fractures in Children, by Dr. John F. Erdmann, of New York County; The Question of Administering Digestive Ferments, by Dr. H. A. Haubold, of New York County; Notes on the Retention of Urine from Urethral Stricture, by Dr. John W. S. Gouley, of New York County; a paper by Dr. Henry D. Didama, of Onondaga County; A Brief Contribution to the Therapeutics of Diabetes, by Dr. John Blake White, of New York County; The Criminal—His Social and Legal Status, and the Philosophy of Reformation, by Dr. William A. White, of Broome County; and Gastro-succorrhœa Continua Chronica, by Dr. Max Einhorn, of New York County.

Nitrate of Silver in the Treatment of Epilepsy.—The *Lancet* for September 21st contains an article on this subject by Dr. William Murray, of London. With regard to the treatment of epilepsy, he says, it is evident that our efforts must be directed to the removal or prevention of this tendency to an explosive discharge in the nervous and muscular systems. Without attempting to explain, he says, how this inhibited state of the nerve centres is brought about by several remedies, some of them do their work by preventing this explosive union of atoms or molecules. One of these remedies—nitrate of silver—offers a fair field for study in this direction. Some years before, says the author, he expressed the opinion that a deposit of silver in some form, probably chloride, in the molecules or submolecules of the nerve cells and fibres so altered the polarity—that is, the explosive tendency—of the molecules as to arrest the epileptic discharge. Dr. Gowers, he says, gives a mental picture of what actually takes place in the action of the nervous and muscular tissues when force is set free. He points out that the susceptibility to nervous and muscular action needs but the influence of a stimulus to bring about a manifestation of the latent energy in these tissues, and that an increase of susceptibility or of stimulus may evoke an epileptic explosion. The inference is, says Dr. Murray, that a remedy which is deposited in the tissues may by its chemical inertia interfere by its presence with the minute motion or chemical activity of adjacent atoms and thus prevent their explosive union. Experience has taught us two remarkable things, he says: First, that nitrate of silver will cure epilepsy where the bromides have utterly failed; secondly, that a patient who has subjected himself to a course of silver, producing a deposit, secures a remarkable immunity from a number of small nervous ailments. This latter effect, he says, throws a great deal of light upon the subject and corroborates the view that the silver blunts the polarity of the nerve centres and renders them stable and less easily disturbed by outward influences. In confirmation of these statements the author relates the following cases in proof of the power of nitrate of silver to cure epilepsy:

Twenty years ago he was consulted by the manager of an important railway department who had become a confirmed epileptic, suffering from frequent and severe fits. Bromides had been fully tried in large doses by several eminent physicians. Partial relief only was obtained, and that at a great sacrifice of memory and general business alertness. The author then put him on a course of nitrate of silver for nine months. He had no fit after the first month of the course, and he has never had one since. His health has been much better and there are no small ailments.

The second case was that of a gentleman in easy circumstances who had been more or less epileptic for thirty years; he had been a prey to a number of small ailments, to which, the author believes, bromide, by lowering the vitality, largely conduces. Neuralgic headaches, muscular twitching, lassitude, frequent lapses of *petit mal*, not to speak of loss of memory, and an occasional severe fit, combined to render his life a burden. He deliberately accepted a course of nitrate of silver, regardless of consequences, and has since reaped his reward. He is seldom out of sorts, is comparatively free from headaches, has no twitchings, and has never had a trace of epilepsy, not even *petit mal*. The author states that in this latter case the faintest touch of leaden hue was produced, and the patient was not aware of it.

With regard to the effect of nitrate of silver in minor ailments, he says, there is no more striking illustration of it than in those cases of weak, irritable stomachs which are characterized by intense depression of spirits, apprehensions, and failure of pluck or courage. In these cases a remarkable change takes place both in the functions of the stomach and in the tone of the nerve centres of emotion. To get the best results in these stomach cases, the nitrate should be dissolved in distilled water and taken on an empty stomach. Dr. Murray thinks that a distinct local effect on the mucous membrane, as well as the more remote effect on the nerve centres, by giving it in this form, is produced.

Pernicious Anæmia Cured by Bone Marrow.—The *Intercolonial Quarterly Journal of Medicine and Surgery* for August publishes an account of a case which came under the observation of Dr. Alfred Austin Lendon, of Adelaide, South Australia. The patient, says the author, was confined to his bed, and, although well nourished in body, was not inclined to exert himself in any way. He was taciturn almost to moroseness and very despondent. He was exsanguine, both as to the skin and as to the mucous membranes, the former being of a lemon tint. There was no jaundice, and the pallor more resembled that of profuse hæmorrhage than that of saturnine poisoning, although the blue line was evident. The loss of blood was estimated at two pints. There were no physical signs in the lungs; there was neither albumin nor sugar in the water, which was of low specific gravity (1·014); and there was no enlargement of the liver, of the spleen, or of the lymphatic glands. There was no abdominal tumor, and no alteration in the bones; a hæmic murmur was audible over the cardiac base, and there was slight œdema of the legs. Nausea was the most prominent symptom, and it was accompanied by flatulence and other indications of dyspepsia, which were relieved by a course of peptonized milk. The debility and the anæmia, however, resisted all treatment. On May 14, 1894, he was removed to the hospital, and while he was there it was ascertained that he had slight pyrexia and a rapid pulse; but an examination showed no notable excess of white corpuscles, merely a diminution in number of the red corpuscles, which seemed to be unusually pale. There was no evidence of Addison's, Hodgkin's, or Virchow's disease or of osteitis deformans. He was taken to his home on the 31st and treated for a month, but without any sign of improvement in regard to the anæmia or the general debility. On the 27th of June Dr. Lendon began to feed him with bone marrow, and from this date he steadily improved. After a month he was able to walk a mile, and in another month he was able to digest any ordinary kind of food. At the present time he states that he is feeling quite well and able to work.

This case, says the author, is one of great interest, not only on account of the encouragement we may derive from its successful treatment by a novel method after the failure of the orthodox treatment by drugs, but also on account of the difficult problems it affords for discussion as to its pathology.

With regard to the treatment by marrow, he says, he was led to try it after reading Dr. Charles MacAlister's lecture on the Inhibitive Functions of the Glandular Secretions, in which he suggested using marrow bone, although for another disease. The author cites another case, which was reported by Dr. Danforth, of Chicago, and one of splenic leucocythæmia, by Dr. Lawrie, in which the treatment with marrow was successful.

An Anomaly and Absence of the Semimembranosus in the Same Person.—In the *Nouveau Montpellier médical* for August 24th, M. P. Gillis relates the case of a woman, thirty years old, in which the anomaly observed, he says, serves only to increase the number of facts which show the relations of the semimembranosus and the adductor magnus. On the other hand, the fact of the absence of the semimembranosus appears to have an altogether exceptional interest, for this is considered by all anatomists to be a very rare occurrence.

On the right side the biceps and the semitendinosus were normal, but the latter, at the first glance, appeared to rest directly on the adductor magnus. On dissecting further, there was found, in place of the semimembranosus, a small muscle twenty centimetres in length. The fleshy part, which was flattened transversely, was a centimetre in width. At its extremities the muscle tapered and formed two tendons, an upper and a lower one. The upper tendon passed beneath the common tendon of the biceps and of the semitendinosus, and became enlarged to be inserted into the external and highest portion of the ischiadic tuberosity, following a vertical line of three centimetres in length, placed immediately behind the insertion of the quadratus femoris. The lower tendon, which was more slender, passed over the posterior surface of the femoral condyle and terminated on the capsule of the knee, which it thus slightly strengthened. Five centimetres below its ischiadic insertion the upper tendon sent out a tendinous fasciculus which was followed by a large muscular fasciculus that joined the inner portion of the adductor magnus and ultimately became inserted with it on the subcondylar tubercle.

On the left side the upper angle of the popliteal space was formed externally by the biceps and internally by the semitendinosus alone, resting on the adductor magnus. The semitendinosus was normal and of the same dimensions as that of the opposite side. The adductor magnus was much thinner than that of the right side, which was strengthened by the fasciculus from the semimembranosus. The most minute analysis of the fasciculi of the adductor magnus did not reveal any traces of the semimembranosus, which was not represented on the ischium, on the capsule of the knee, or, finally, in the interstice which separated the semitendinosus and the adductor magnus.

Visible Gastric Peristalsis.—In the *Journal des praticiens* for September 21st M. Matton, of Dax, contributes a short article on this subject. From an observation of the more recent cases, he says, he feels that he is justified in drawing the following conclusions: From a physiological point of view, the stomach is habitually forced into upward peristalsis by a pyloric obstacle, whether it is organic or simply spasmodic. The peristalsis is regularly periodical and always appears at meal time, whether any food is eaten or not. Furthermore, the force of this motor habit of the stomach is such that in the living subject, after operative restoration of the obstructed gastro-intestinal tract by gastro-enterostomy, the visible intermittent undulation still persists for a certain length of time, although there is no further obstacle and consequently no necessity for muscular effort. Finally, in no case has the visible and exaggerated gastric contraction shown a division between an upper cardio-pyloric canal and a separated lower *cul-de-sac*.

Pilocarpine as a Prophylactic against Diphtheria.—The *Progrès médical* for September 21st contains an abstract of an article from the *Médecine moderne* in which an account is given of a paper on this subject which was read by Dr. C. Sziklai before the Hungarian Congress of Physicians and Naturalists. The author stated that this substance not only rapidly and surely cured diphtheria after it had shown itself, but that it might be employed as a prophylactic measure against infection from that disease. Its prophylactic properties, he said, were especially remarkable in croup and in false diphtheria of the larynx. Several authors had also employed it successfully in pneumonia. It might also, in true diphtheria, prevent the formation of obstructing false membranes. As a prophylactic, pilocarpine hydrochloride in a one-per-cent. solution should be given three times a day in doses of ten drops. To children under a year old only half of this dose should be given. For three years M. Sziklai had employed this drug, sometimes as a curative, sometimes as a prophylactic, in rather large doses without any unfavorable symptoms having shown themselves. The daily prophylactic dose of a solution of pilocarpine was about 0·3 of a grain, which could be given to children over a year old without any unfavorable consequences.

Judging from his own experience, Dr. Sziklai thought that pilocarpine was a specific for true and false diphtheria, which brought about a sure and rapid cure; that it was also a prophylactic against simple, polymicrobian, and false diphtheria. The author cited many observations in support of this theory, and stated that, in spite of the complete absence of hygienic care in some cases, pilocarpine had been the means of saving the lives of the children.

Sodium Salicylate as an Oxytocic.—The *Lyon médical* for September 22d publishes a report of a recent meeting of the *Société des sciences médicales*, at which M. Vinay reported the case of a woman who had had an attack of hepatic colic with icterus while in a pregnant condition. After her entrance into the *Maternité* at the *Hôtel-Dieu* an examination was made, and it was found that the child was dead. A daily dose of seventy-five grains of sodium salicylate was then given for four days, which brought on uterine pains and resulted in a natural delivery. M. Vinay is of the opinion that sodium salicylate is an oxytocic under certain circumstances.

Lectures and Addresses.

THE COMING RÔLE OF THE MEDICAL PROFESSION IN THE SCIENTIFIC TREATMENT OF CRIME AND CRIMINALS.*

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Dr. Cesare Lombroso, in his work on *The Applications of Criminal Anthropology*, quotes Rondeau as saying, in an essay on the death penalty:

"Even assassins are patients, as well as all other criminals. They should be punished because they disturb the regular course of social life, because they are obstacles to the development of the species.

"Conceding that every crime is the natural outcome and a logical consequence of some disease, its penalty should be nothing else than a medical treatment."

The idea which underlies the views of Rondeau is that moral liberty has no existence, and that a moral evil is the result of physical fault. "In his system of repression all prisons would be transformed into hospitals; no attempt would be made to improve the organization of convicts. The thief and the vagabond would be treated by making them taste the joys of work, and in secluding for life those inaccessible to all treatment."

Society, I venture to say, is hardly prepared to accept the logical consequences of these views; but it must be admitted that the treatment of crime and criminals, under existing laws and their methods of execution, is a failure, and a failure so serious in its results that it is difficult to imagine what will occur before a revolution takes place and scientific criminology and penology become established as part of the social fabric.

It has been stated on competent authority that crime in Great Britain is responsible for an annual public expenditure of ten millions of pounds sterling. "According to a recent report to the Ohio Board of State Charities, the citizens of the United States spend an annual sum of fifty-nine million dollars on judiciary, police, prisons, and reformatories." The president of the National Prison Congress of the United States says:

"Other questions which agitate the public and divide parties are doubtless important; but the country can live and prosper under free trade and protection, under bimetallism or monometallism, under Democracy or Republicanism, but it can not survive a demoralized people with crime in the ascendant. That crime is on the increase out of proportion to the population is indicated in many ways, but for the country as a whole the United States census is the most reliable guide. Let us look at it by decades:

	Prisoners.	Ratio to population.
1850	6,737	1 in 3,442
1860	19,086	1 in 1,647
1870	32,901	1 in 1,171
1880	58,609	1 in 855
1890	82,329	1 in 757"

In Great Britain, Germany, France, Italy, and other civilized countries, the penal systems do not differ very materially from ours; and we may assume that in these countries crime is not more successfully treated. What wonder is it, then, that jurists who have studied this great question, like von Liszt, of Germany, "admit that our existing penal systems are powerless against crime"!

The chief object of a penal system is the protection of society. The facts that I have just cited show that the protection of society against crime and criminals is becoming more and more alarmingly inefficient.

The statements and statistics just given have not been exhumed from obscure sources. They are taken from Morrison's introduction to *The Female Offender*, by Lombroso and Ferrero, recently republished in New York and extensively circulated. Without considering the merits of this book in the form of its mutilated and imperfect translation, in which it seems hardly worthy of the distinguished reputation of Lombroso, the statistics alone, given in the introduction, should awaken the public to the necessity of a radical reform in penal methods and the danger of delay.

Sentimentality in questions of criminology and penology should be put aside. It has no more place in criminal law and penal administration than in medicine and surgery. Crime is a disease of our social organization. It is true that it is ineradicable, but it may be restricted within much narrower limits than at present exist. Crime calls for intelligent and scientific treatment. While crime can not be abolished, all criminals are not hopelessly affected with crime. Individuals may be protected against crime as Jenner has protected individuals against small-pox. Crime may be a constitutional disease, as in the born criminal, or it may be due, in individual cases, to surroundings, teaching, or example—a sort of contagion. It has been abundantly shown that criminals may be divided into two great classes, the curable and the incurable; but the disease which we call crime has nearly as many phases and varieties as are presented by the nosological catalogue. Society needs the aid of competent men to undertake the task of separating the curable from the incurable, to restore the former to usefulness and to protect our social organization against the latter. Jurists, so-called lawgivers and those who execute the laws have failed. In my opinion, the only hope is in the medical profession. This is the explanation I have to give of bringing the subject of crime before the association. I have lately become fully sensible of the immense extent and importance of the subject in its relations to the profession, and, more than all, of my deficiencies in study and experience in the questions involved; but no problem can come before us more worthy of thorough investigation and careful consideration. I venture to recommend, and hope that in a future meeting or meetings the association may make this matter the subject of formal discussion and attempt to devise something to meet in a measure the existing and pressing necessity for reform.

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* The President's annual address before the New York State Medical Association, October 16, 1895.

It is to be feared that the medical profession can have little direct influence in the making or repeal of laws. The past does not show any encouraging success in this direction. The protection of the community against so dangerous and evident an evil as the unrestricted sale of patent medicines of unknown composition, many containing powerful and deleterious drugs, has never been accomplished. The profession has found itself powerless against the immense pecuniary interests involved in the sale of secret remedies, and has not been able even to compel the disclosure of the composition of these preparations, so that the public might know what it is buying. How little, then, can we hope to do in the way of enacting intelligent penal laws or of repealing bad laws that have been handed down from antiquity! Our chief hope at present is to induce judges, lawyers, and lawmakers to study law in the light of modern scientific knowledge.

The existing system of criminal law is based upon the ancient idea of vengeance and retaliation in the form of what is known as punishment. Crimes that are not criminal and offenses that do not offend are created every year by legislative bodies, as well as laws which restrict the liberty of certain classes, giving special privileges to others. Police organizations, whose duty it is to preserve rights, order, cleanliness, health, etc., and who are "for the enforcement of the laws and the prevention of crime," often induce, by fraud and deceit, men to commit so-called crimes so that they may be punished therefor. Does not this tend to increase the number of enemies of society, who are already so numerous and threatening? Are the real offenses against the good order and happiness of the people so easily repressed that we can afford to create new and artificial crimes by statute?

In its application to the treatment of crime and criminals, the idea of the word law, in the minds of jurists and legislators, needs revision. In its strict and scientific sense the word law means something that is laid, fixed, or set. A law is something that exists, has existed from the beginning, and the mind of man can not conceive that it will ever cease to exist. Man can neither make, destroy, nor modify a law any more than he can create or annihilate an atom of matter. Laws, when known, have been discovered by man, not created. The laws of gravitation, of the correlation and conservation of forces, of certain diseases, and the most terrible and inexorable of all, the law of heredity and atavism, have been discovered by illustrious searchers after truth. Man may modify the working of certain natural laws, but the laws themselves remain fixed and immutable. The universe, animate and inanimate, including man, exists and progresses in accordance with laws, known and unknown. Man is subject to psychical as well as physical laws, and no human act is without a cause, immediate or remote. In a so-called legal sense and in its relations to social organization, law may be termed formulated equity and applied justice; but, in the words of Blackstone, "No human laws are of any validity if contrary to the law of Nature, and such of them as are valid derive all their force and all their authority, mediately or immediately, from this original."

Man is a gregarious animal. An outcome of the development of intelligence and knowledge is social organization. This is in accordance with a law of Nature, and it involves the necessity of ordinances and regulations for the protection and preservation of communities. When these ordinances and regulations are inequitable and unjust, there is immediate dissatisfaction and rebellion sooner or later. When the natural laws of what may be called man's physical organization have been violated, either in the individual or in his ancestry, the result is disease. A man may suffer for the faults of his own organism or from infection or from contagion. It is the province of the physician to endeavor to cure the disease of an individual or care for him during its progress, so that he may be restored to health, and to protect individuals and communities against infection and contagion, thus preventing disease. Physicians have learned how to cure certain diseases; by the applications of sanitary science and quarantine they protect communities against certain diseases; recent discoveries have enabled them to secure immunity from certain diseases. In the future, carrying out recent researches in psychological medicine, physicians will be largely instrumental in the treatment of moral disease. It is to the physician that society will look for the differential diagnosis between the curable and the incurable criminal. Scientific progress will lead us finally to abandon the ancient idea of punishment of crime, and to substitute for it treatment and correction. The only punishments will be those necessary for the enforcement of discipline in prisons and elsewhere. The treatment of criminals will resolve itself into measures to reform the curable and to protect society against the incurable.

A necessary preliminary to the intelligent treatment of any disease is diagnosis, and this, which is one of the fundamental principles of the science of medicine, is logically applicable to moral as well as to physical or mental disease. It is universally recognized that the insane are not responsible for their acts to the extent of deserving punishment. The organization of society demands that there be protection against the harmful acts of the insane, and the dictates of humanity call for the protection of the insane against himself. It may fairly be assumed that no mental disturbance taking the form of insanity is without a physical cause, however obscure this cause may be. Is it possible that every moral delinquency has a physical cause? It is certain that nearly every confirmed and incurable criminal has a special leaning toward a certain class of crimes. Is there a physical vice or defect which leads to the commission of these crimes, when conditions are favorable to the full development of this vice and to its expression in criminal acts? These are questions that are occupying the minds of criminologists of the present day.

It is often said that the border line between insanity and crime is very narrow and indefinite. The plea of insanity, which is so often presented in extenuation of certain crimes, the irresistible impulse which some insane persons have to commit certain crimes—such as homicide, suicide, stealing, arson, etc.—would seem to show that insanity, in some of its phases, readily fades into criminality, or that criminality may be the first manifestation of insanity. Nothing illustrates this idea more strongly than the distinctions that have been drawn between criminality and so-called moral insanity.

To my mind, it should not often be difficult to distinguish between criminality and insanity, provided the data from which to draw a conclusion be full and sufficient. There are the criminal insane and the insane criminal; the one, an insane person who commits crime under an insane impulse; the other, simply a criminal who has become insane. It might be difficult to fix the responsibility of the insane criminal if it were impossible to determine the time when he became insane; but there should be little difficulty in making a diagnosis of the criminal insane. Other difficulties may also present themselves: An outburst of insanity, made evident by a palpably insane act, under the influence of what seems to be a sudden impulse or a recent delusion, has probably been preceded by a delusion or delusions carefully concealed. A criminal act, without insanity, may be discovered, the criminal having, during a long period of years, sedulously maintained the appearance of scrupulous honesty, often assuming the cloak of religion. In some cases of this kind, it has been maintained that the person is morally insane and is irresponsible. It has always been found very difficult to show that a person who commits a crime against property, with intelligent efforts at concealment, hoping and endeavoring to reap the advantages of his crime or attempting to escape its consequences by flight, is irresponsible on any theory. A kleptomaniac steals simply because there is an impulse to steal which he can not resist. He does not profit by the crime and has no logical reason for stealing. The criminal, however, always expects and attempts to enjoy a personal advantage as the result of his crime, or he has a reason which to his criminal mind is logical. The existence of strong temptation, great need, or heavy financial burdens, sudden passion which has a logical cause, revenge or hatred engendered by actual injuries or wrongs, afford satisfactory explanations of many crimes, and enable us to determine the question of responsibility. I can hardly bring myself to a belief in the existence of what is called moral insanity, excepting the moral defects which are so often observed in dementia and senility, when certain passions remain and the normal power of self-control is impaired.

To Garofalo is due the credit of indicating differences between the criminal and the insane, which are clearly appreciable with very few exceptions. In the insane, the accomplishment itself of the criminal act is the end and object, and is, in itself, a source of pleasure and satisfaction. In the criminal, the act is done as a means of obtaining a material advantage, and the act itself may be repugnant. It is the abnormal nature of the pleasure and the fact that no other satisfaction is sought for which characterize the insane and distinguish him from the criminal.

The classification of criminals is not difficult. Dr. D. Hack Tuke adopts the classification of Ferri, with slight modifications:

The criminal by passion, as a rule, has no criminal characteristics. He is simply lacking in self-control and almost invariably experiences remorse. Actually, a criminal from passion is not a criminal and is not a permanent enemy of society. It is necessary, however, to our social system that he should take the consequences of his criminal acts. He does not commit crimes against property.

The occasional criminal, or the criminal by occasion—the semi criminal of Lombroso—may properly be regarded as belonging to the criminal class. He may or may not have an opportunity or undergo temptation to commit crime; but under temptation and with opportunity he may commit crime from mere weakness of character. Still, there is no occasional criminal who is without criminal tendencies in a greater or less degree.

Havelock Ellis's distinction between the professional criminal and the instinctive, or the born criminal of Lombroso, seems to me to be artificial. The born criminal almost always presents physical signs of degeneration, and his history often reveals heredity or atavism, his moral criminal characteristics usually being intensified by surroundings. It is thought by some alienists and criminologists that there is often little difference between the born criminal and the victim of so-called moral insanity; but it must be admitted that a born criminal is seldom regarded as insane unless he belongs to the higher classes of society.

The professional criminal may be a born criminal, with physical characteristics, or he may present no physical abnormalities. The high-class professional is always a man of considerable intellectual ability, usually free from small vices and a hard worker. It is pretty generally admitted that a professional criminal past the age of thirty can not be rescued from criminal life. The professional criminal is, of course, an habitual criminal; but other habitual criminals there are of less ability, whose methods of exercising their vocation do not entitle them to rank with professionals.

We have little or nothing to do, in a scientific way, with the criminal by passion. Sad experience and remorse may teach him a lesson and lead him to exercise self-control. He must accept the consequences of his criminal acts; but it is our duty, especially toward the young, to provide that he be contaminated as little as possible by surroundings while under control. So it should be with those who offend simply against good order or who are guilty of what may be termed artificial crimes. It is not a crime to bake or sell bread at prohibited hours or to violate certain ordinances necessary to public decorum or cleanliness. Many men and more women can never be made to feel that it is a crime to evade duties on purchases for their own use, yet the laws in this regard must be enforced. So long as legislators continue to enact new so-called criminal laws every year, and officials are compelled to select certain of them to enforce—as it is physically impossible to enforce them all—criminal statistics will never represent the actual detected criminality. Criminality can be studied in a statistical way only from the reports of courts and prisons; and it would contribute much to the accuracy of our knowledge if we could eliminate all except offenses against natural laws and those which are essential to the integrity of our social system.

In the scientific study of crime, the physician has to do mainly with the occasional criminal, the habitual criminal, and the born criminal; and in this study, the first thing is to separate these from the offender who is not a criminal and the occasional criminal. He will be forced to rely upon the courts for facts in regard to criminal acts. Such and such persons, with such and such an official record, have committed certain offenses; and these persons, on conviction, are turned over to experts for diagnosis and treatment. The ascertainable physical and moral characteristics of the offender may not be useful in the determination of the crime, but they may be very useful in the classification and treatment of the criminal.

The born criminal is seldom without physical evidences of what is now called degeneration. He presents certain physical abnormalities. In fact, according to the notions of Lombroso and his followers, without such abnormalities he is not a born criminal. All of the purely physical characteristics observed in the born criminal are present to some extent in the normal man. Some of those which have been described by Lombroso and others are: peculiar skull and facial conformations; left-handedness and ambidexterity; absence or exaggeration of tendon reflexes; abundant hair on the head, with scanty beard; muscular abnormalities; anæsthesia and analgesia; unusually rapid recovery from wounds, or "disvulnerability"; obtuse tactile sensibility; unusual acuteness of vision; defects in the sense of hearing, taste, or smell; with many others less marked and regarded as of less importance. Take, however, individual instances in which even a considerable number of these abnormalities exist. We may have a person with a marked peculiarity in skull formation, a heavy jaw, abundant red hair, scanty beard, diminished knee-jerk, defective sense of contact, acute vision, dull hearing, taste, and smell, some muscular abnormality, and yet this person may pass through life honest and upright, showing no criminal tendency even when exposed to temptation and favored by opportunity; but it would be idle to say that, in a person who had committed a crime, physical abnormalities found to be more frequent in the criminal than in the normal man, and particularly frequent in a certain class of criminals, may not be of great value in classifying the criminal, forming an estimate of his dangerous qualities and of the probability of reformation. A person may have the so-called insane ear or strikingly abnormal palate, great irregularities in the development of the teeth and an insane ancestry, and yet we must wait for positive evidence of insanity by word, deed, or action before he can be pronounced insane. So physical abnormalities, even with criminal ancestry, are never in themselves absolute evidence of criminality.

The weakness in the position that there are any positive physical tests for criminality is twofold. There is no fixed normal standard of comparison; and the exceptions in which physical peculiarities assumed to be characteristic of criminality exist in normal individuals are very frequent.

On the other hand, the mental and moral characteristics of criminality are fairly positive and definite. Given a number of persons who have committed actual crimes; meaning by this certain offenses against the person or against property which are violations of natural laws: These include homicides; all kinds of crime against property, with or without violence; felonious assaults; malicious injury to person or property; the aiding and abetting of crime for gain, and other forms of crime which readily suggest themselves. There may be excluded: offenses against good order or discipline, not in themselves criminal; purely social offenses; purely political offenses; honest differences from prevalent opinion on political, social, or religious questions; offenses against laws which restrict the natural rights of man; offenses innocently committed through ignorance, etc. The mental and moral peculiarities or abnormalities of these individuals may well be made use of in diagnosis, classification, and treatment. Taken in connection with these, the purely physical abnormalities become of great importance, as they do in the diagnosis, treatment, and prognosis of insanity.

As I have already said, the criminal by passion alone is a normal man, but deficient in self-control under provocation or strong emotion. He presents no criminal history. The criminal act is followed by the deepest regret and intense remorse, usually with a desire for all possible reparation.

The criminal by occasion, or the one who commits a crime when occasion presents itself in the form of temptation and opportunity, may lack physical and moral characteristics of criminality and have no criminal heredity, being simply of a weak and pliable organization. This unfortunate should be treated most carefully, and be protected, as far as possible, from influences which may render him an habitual criminal.

The professional and the habitual criminal are the most dangerous enemies to society. Criminals belonging to this class form a criminal organization ruled by the dominating personality of those of superior intelligence. They may possess few, if any, abnormalities called degenerative; but they have no feelings of remorse, even for the gravest crimes, are social in their habits, not solitary, and use the argot, or conventional language of criminals and vagabonds, which is never employed by the criminal by passion or the criminal by occasion. The professional is usually not cowardly like the born criminal. He is temperate, prudent, without real friendships, and his sexual ties are seldom more than transient and unstable. These aristocrats of the criminal world have talents and industry which, directed in legitimate channels, would command respect. With the professional criminal crime is profitable. Dugdale, the author of that remarkable study of crime called *The Jukes*, says: "We must dispossess ourselves of the idea that crime does not pay." Again, he says: "Those who do minor crimes commit about one hundred to one hundred and fifty offenses to *one commitment*, while those who 'go for big money' get caught once out of five times." A great problem is to make crime unprofitable; but this appears to be excessively difficult. The idea of Garofalo is certainly in the right direction. On conviction of a crime against property, strip the criminal of everything necessary to complete restitution; or if no property can be reached, let the hard labor of the convict contribute as far as possible toward that end. As it is, the innocent sufferer finds it more to his advantage to compound a felony than to aid what is called justice; and often he is deprived of his liberty in a house of detention while the criminal is at large on bail.

It is with the born criminal that the medical profession will have most to do; and the scientific study of this abnormity can not fail to be of immense benefit to our social system. The born criminal always presents certain distinctive mental and moral abnormalities.

Grouping together the professional, the habitual, and the born criminal, the same differences in intelligence and education are found as in the honest walks of life. Those who are of a low degree of intelligence are forced to limit themselves to crimes that are within the scope of their mental capacity. They replace intelligence with a low duplicity and cunning, and they often act under the direction of others. These most frequently present physical evidences of degeneration. Experience in reformatories shows that many are incapable of education or even of learning a trade which requires a moderate degree of skill. A great proportion of these are incorrigible. While all authorities agree that education in itself is no bar to criminality, it must be admitted that the discipline which is involved in education and the avenues which it opens to honest remunerative labor are favorable elements in reformation when other conditions render this possible.

The chief defect in education observed in criminals is in the line of technical skill. According to the observations of Dugdale, 794 per cent. of the criminals examined had never learned a trade. This observation is confirmed by all students of criminology.

What Havelock Ellis calls moral insensibility is always observed in the born criminal. It is very important to distinguish this from so-called moral insanity. General moral insensibility is a want of appreciation of right and wrong from the criminal's point of view—it may be called perversity or depravity—and criminal acts are not followed by repentance or remorse. Those who are regarded as morally insane have no genuine remorse, and the argument in favor of moral insanity without responsibility is based on the notion that the moral insensibility is confined to a single class of crimes, such as forgery, breach of trust, etc. It is difficult to imagine that a person has a moral defect as regards the crime of forgery, for example, and is entirely honest in other regards. If the idea of monomania is to be discarded by alienists, the idea of moral insanity must also fall. As to the question of monomania, how is it possible that a lunatic shall have a single delusion which his intelligence is incapable of correcting, and yet this intelligence be absolutely normal in all other regards? The mental disease may manifest itself in a single delusion which can not be concealed; but none the less is it positive proof of mental disease.

The born criminal never has remorse. This is, indeed, pathognomonic of congenital criminality. Bruce Thomson studied this question in four hundred criminals convicted of premeditated homicide, only three of whom expressed remorse. If it is ascertained positively, after a sufficient period of observation and treatment, that a criminal has no real remorse or repentance, it is certain that we have to do with an incurable born criminal.

The general character and mode of life of habitual criminals are interesting and instructive. Such criminals are invariably vain, superstitious, constitutionally lazy and improvident, and are often sentimental and excitable. They are social with their own kind, prone to orgies and to association with a certain class of prostitutes who have the same kind of moral insensibility. They use among themselves the argot, or conventional criminal language, which is quite different from the ordinary vulgar slang. They are fond of tattooing. Lombroso says: "Among male criminals the practice of tattooing is so common as to become a special characteristic." The high-class professional is certainly an habitual criminal, and may be a born criminal; but his habits are usually such as do not interfere with the successful exercise of his profession.

It is impossible in the space at my command to do more than refer to the great questions of atavism, heredity, and environment in their relations to criminality. *The Jukes*, that remarkable study by Dugdale, gives an idea of the terrible influence of heredity. The estimates by Dugdale from the facts which he ascertained are certainly reasonable. He calculated that the descendants of one individual, making a family of twelve hundred strong, entailed upon the community during a period of seventy-five years an amount of loss and expense equal to $1,250,000. If any relief is to be expected from the scourge of the posterity of criminals, it is certainly to the medical profession that society must look.

When the diagnosis of the criminal and his classification is not to be obtained from the criminal's own record, this can be made only in prisons and reformatories. A criminal under thirty years of age on his first conviction is certainly a most interesting subject for study. The result of such study should class him either as a criminal by passion, a criminal by occasion, a born criminal, or a criminal insane. The only way to afford an opportunity for diagnosis and proper treatment is by the indeterminate sentence. The trial by judge and jury merely fixes the crime and its responsibility; it can not bring to light the true character of the criminal and indications for his intelligent treatment. Measuring the punishment to the crime is in the spirit of vengeance, which does not belong to man; it breathes no thought of reformation or of intelligent protection of society. In the words of Van Hamel: The greatest enemy to the new tendency in the treatment of criminals is the doctrine of penal satisfaction, descendant of "ancient vengeance, which has the pretension to confide to man a task which can only be reposed in the hands of God." "It is not enough," says Wines, "that criminal jurisprudence should be humane; it must also be intelligent."

The law has thrown such safeguards around the criminal that many crimes may be committed with impunity, and criminals frequently escape conviction when there is no room for doubt in regard to their guilt. There are, however, few unjust convictions. In the examination of nearly a hundred and fifty convict witnesses in the late investigation of the Elmira Reformatory not more than one or two hesitated to admit their guilt. Dugdale says: "Of those who are essentially not criminal, who are of sound mind and body, honest and industrious, and of good stock, there are among State prison convicts from one to two per cent. They are usually committed for crimes against the person." The conviction of an entirely innocent person of honest antecedents must be of extremely rare occurrence.

On conviction of a criminal he should be turned over to the State for treatment. The judge should not fix the so-called punishment. Fortunately, laws are not wanting in the State of New York to render possible this beginning of an intelligent criminal administration. All will admit the value and saving to society of the reformation of criminals; and all criminologists, without exception, regard the indeterminate sentence as indispensable to proper reformatory measures. I copy from *The Sun* of August 14, 1895, the following, which shows that judges have the power to impose indeterminate sentences, with very slight restrictions and few exceptions:

"A fact not generally known even among the lawyers who practise in the criminal courts in this city is that the State prison law provides for indeterminate sentences such as are in operation at the Elmira Reformatory. The provision is made in section 74 of the Prison law, which is as follows:

"'Whenever any male person over sixteen years of age shall be convicted of a felony which is punishable by imprisonment in a State prison for a term to be fixed within certain limits by the court pronouncing sentence, the court authorized to pronounce judgment upon such offender, instead of pronouncing upon such offender a definite sentence of imprisonment in a State prison for a fixed term, may pronounce upon such offender an indeterminate sentence of imprisonment in a State prison for a term with minimum and maximum limits only specified, without fixing a definite term of sentence within such limits named in the sentence, but the maximum limit so specified in the sentence shall not exceed the longest period for which such offender might have been sentenced, and the minimum limit in said sentence specified shall not be less than the shortest term for which such offender might have been sentenced. The maximum term specified in such indeterminate sentence shall be limited in the same manner as a definite sentence in compliance with the provisions of section 697 of the Penal Code.'

"Succeeding sections appoint the Superintendent of State Prisons, the agent and warden, the chaplain, the physician, and the principal keeper of each prison a board of commissioners of paroled prisoners for each prison. They are to meet from time to time, and each prisoner sentenced under the law has a right to appear and apply for his share on parole or for an absolute discharge. The commission is empowered to grant an absolute discharge where it believes that the prisoner will live an honest life. When the members of the commission feel a 'reasonable probability' only, they may parole. Other sections provide for the retaking of prisoners who violate their parole at any time before the maximum term for which they might have been sentenced expires. Although the leading penologists of the world advocate the indeterminate sentence system, the judges of the courts don't seem to take to it. The law has been on the statute books since 1890 and only twenty-eight prisoners have been sentenced under it."

If our judges could be brought to carry out this law, an immense advance would at once be made in the intelligent treatment of criminals. Every prison should include a reformatory, if for nothing else, to separate those who may possibly be reformed from the incorrigible.

The born criminal, when he becomes an habitual criminal, is and always will be an enemy of society. He can not be reformed, but the safety of the community demands that he be kept under constant surveillance when not actually confined. Not only is he dangerous to society at large, but his association with the corrigible criminal is a great hindrance to the work of reformation.

The penal code provides for the treatment of the habitual criminal, who was defined by statute in 1881, although the first sentence under the code was pronounced August 29, 1895.

I am indebted to *The Sun* for the following citations:

NEW YORK STATE PENAL CODE.

690. *Habitual Criminals.*—Where a person is hereafter convicted of a felony, who has been, before that conviction, convicted in this State of any other crime, or where a person is hereafter convicted of a misdemeanor who has been already five times convicted in this State of a misdemeanor, he may be adjudged by the court, in addition to any other punishment inflicted upon him, to be an habitual criminal.—*Code Cr. Proc.*, sec. 510. People *v.* McCarthy, 45 How., 97.

691. *Person, etc., of Habitual Criminal.*—The person of an habitual criminal shall be at all times subject to the supervision of every judicial magistrate of the county and of the supervisors and overseers of the poor of the town where the criminal may be found, to the same extent that a minor is subject to the control of his parent or guardian.—*Code Cr. Proc.*, sec. 514.

692. *Effect of Pardon.*—The governor may grant a pardon which shall relieve from judgment of habitual criminality as from any other sentence; but upon a subsequent conviction for felony of a person so pardoned, a judgment of habitual criminality may be again pronounced on account of the first conviction, notwithstanding such pardon.—People *v.* Price, 53 Hun., 188; 24 N. Y. State Rep., 936.

It is thus seen that existing laws in the State of New York provide for the classification of criminals, the reformation of the corrigible and protection against the incorrigible. All that is necessary to a practical reform, which must come in the near future, is a judiciary sufficiently enlightened to act in accordance with the provisions for indeterminate sentence and for the surveillance of the habitual criminal, and a prison organization, intelligent, earnest, and capable of carrying out reforms on scientific principles which are now fairly well established. In the work of criminal administration the physician should occupy a prominent place. In the words of Laurent: "The physician should be the friend and student of the criminal as he is of the insane; should know how to distinguish the alcoholic, epileptic, insane, the vagabond, and morally insane. The prison may remain a prison and yet be transformed through the results of criminal anthropology. Prisons are inextinguishable mines for material for investigations in this science." The United States initiated practically prison reforms, beginning with the House of Refuge removed to Randall's Island in 1825 and culminating in the Elmira Reformatory in 1876; and yet "numbers of prisons exist nowadays which fall far below the commonest requirements of a good prison system" (Griffiths).

The treatment of criminals is the great social question of the present day. There is no good reason why we should not take advantage of the studies and experience of criminologists and penologists, treating, without malice or resentment, the criminal as a patient as well as crime as a disease; and there is every reason why we should study crime in our prisons in the same spirit in which we study disease in our hospitals and insanity in our asylums. The objects to be kept in view are the cure of the curable by reformation, protection against the incurable, prevention in the way of limiting the development of criminal tendencies in the young, and deterring those in whom these tendencies have become developed. Punishment, as retribution for crime, has no place in this system. Punishment, except as it deters, is of no advantage to society. The spirit of revenge which leads an individual to kill or injure one who has wronged him has no place in the legal protection of members of our social system. What leads so many good citizens to condone crimes against property, if they can secure any degree of restitution, is the fact that it is of no advantage to the injured that the criminal be punished, to a certain extent at his expense and inconvenience. Punishment, however, is a necessary element of discipline, and nowhere is discipline more important than in reformatories and prisons.

The reformatory treatment of criminals is that which appeals most strongly to us as members of a profession whose mission is to alleviate suffering and preserve health and life. We do not ask, Is it worth while to attempt to reform criminals? but simply, Can they be reformed? On this question I can speak with the advantage of some experience.

In 1894 I had the honor to be a member of a commission of investigation of the New York State Reformatory at Elmira. This investigation continued for about six months, and during that time I made a careful study of the methods of the institution and the results obtained. These results are most striking and encouraging to those interested in prison reform. The system—which time does not permit me to fully describe—involves discharge on parole after a certain period of treatment. It is estimated—and the estimate seems fair—that out of 3,725 paroled from 1876 to September 30, 1893, 3,051 were reformed, or 81·9 per cent. Out of 4,797 indefinites discharged, "whether by parole, expiration of maximum term, or any other way, the percentage of reformations was 63·6." These calculations are based to some extent on estimates. In 1887 and 1888 an effort was made "to verify the estimates of probable reformation as to 1,722 prisoners who had been paroled prior to September 30, 1887." Inquiries to prisons, relatives, employers, and acquaintances of the men were made. Definite information was received as to 1,125 of those paroled. Of that number reliable information was received that 78·5 per cent. had not fallen into crime. This would give a percentage of 51·28 known to have been reformed out of a total of 1,722 paroled. After six months of satisfactory conduct on parole a prisoner receives an unconditional release.

The Elmira Reformatory receives males between the ages of sixteen and thirty, after their first conviction of a crime punishable by confinement in a State prison. They can not be confined longer than the maximum term of imprisonment for the offense of which they have been convicted. The minimum term of confinement is not fixed. On admission, a full description is taken, including mental capacity, moral qualities, education, occupation, previous surroundings, parentage, possible hereditary tendencies, etc. The inmate is put first into an intermediate or probationary grade for six months. For bad conduct he may be at any time reduced to the lowest grade. After good conduct for six consecutive months he is advanced to the highest grade. It is possible for an inmate to earn his parole in twelve months. The average time of detention of those paroled, for six years prior to September 30, 1893, was twenty-two months. The average maximum term of all indefinites received during the same period was five years and nine months.

The reformatory combines within itself a prison, a school of letters, a school of technology, a school of physical training, a series of manufacturing departments, and a military organization. The trade schools embrace thirty-four different trades, and gave instruction, in 1893–'94, to about eighteen hundred inmates. Although carried on primarily for instruction and not for profit, the manufacturing departments realized $53,458.47 profit for the year 1892–'93.

Under the Elmira system no inmate is paroled until he has a situation provided for him and enough money to his credit to support him until he receives his first month's wages. He is under surveillance for six months, and may be returned to the reformatory at any time within this six months should he violate the conditions of his parole.

The agencies which operate in bringing about these remarkable results are the following:

1. The indeterminate sentence, which gives hope of release and incites to efforts at reformation on the part of the inmate.

2. The strict and inflexible discipline, including military training. Most inmates have never been taught self-control and have never been subjected to discipline.

3. Physical training, with no opportunity for committing excesses of any kind.

4. Removal from surroundings and associations of a demoralizing character.

5. Education and technical training. Pike, the distinguished author of *History of Crime in England*, says: "There is one great preventive for crime, one great antidote to instincts inherited from the past, and that is education."

To summarize, a criminal by instinct, his criminality fostered and developed by surroundings, absolutely illiterate, without a trade or means of earning an honest living, with a feeble and vicious physique, may be discharged from the reformatory on parole, physically well and strong, with an education not beyond his station, a skilled mechanic with good employment under honest surroundings. He has six months in which to learn self-reliance and is then a free man. The Elmira Reformatory well deserves its position as the model institution of its kind.

It is so rare that a criminal more than thirty years of age—except the criminal by passion and the criminal by occasion—is reformed, that such are excluded from the benefits of purely reformatory institutions. The objects in the treatment of these and of the incorrigible younger criminals are the protection of society and deterrence by example and fear of consequences of crime. Imprisonment and protracted surveillance of habitual criminals is an essential element in the protection of society against the habitual criminal; and an imprisonment which has no attractions of any kind. An imprisonment at hard labor, the prisoner supported by the barest necessaries of life, with the most rigid discipline and persistent surveillance after release, is what is required, not as retribution, but for protection alone. A dangerous man, like any dangerous animal, should be prevented from doing harm. We confine a dangerous lunatic, largely for our own protection; but not under conditions intended to deter men from becoming insane or to deter other lunatics from committing violent acts, as is evident. Although an habitual criminal may be one by heredity and instinct, he is still capable of a certain self-control and can appreciate the consequences of criminal acts. When these consequences show little chance for profit and involve seclusion from society, at hard labor—which is always repugnant to the born criminal—and with no comforts or distractions, they can not fail to exert a deterrent influence; but humanity demands that criminal jurisprudence and administration should carefully separate from the class of incorrigible and habitual criminals the criminals by passion and by occasion.

The idea of restitution and reparation enters very little into the existing methods of treatment of criminals. Crime should be rendered as little profitable as is possible; and in simple justice the State should force the criminal to make restitution and reparation to the injured to the fullest possible extent. Nothing will more efficiently deter from crime than taking away or largely diminishing the profits of criminal acts. This idea of restitution and reparation pervades the Italian school of criminology and is well represented by Garofalo. Speaking of a certain class of crimes against property, Garofalo, quoted by MacDonald, says:

"For this there is nothing better than the forced payment of the fine and damage to the injured party. This would produce other advantages to society. An unfaithful cashier or fraudulent bankrupt would know that if once discovered he could not enjoy the smallest part of the money stolen, but would have to return all, every penny, or otherwise he would have to work for an indefinite time for him whom he had robbed. This is a forcible way of causing the sudden reappearance of the sum that might be thought to be in the hands of consorts. This is much more useful than imprisonment for a fixed time, which is no profit to any one, and only adds to the damage from the crime the expense of supporting the prisoner. If the money has really been spent the offender must work without respite for the repayment of the injured party. If he will not do it voluntarily, he will be obliged to do it by working for the State, where there is no bread without labor. If, in spite of his efforts, he is unable to gain a sufficient sum, after a certain number of years, according to his age or his good will, this constraint can be fixed to ten or fifteen years; but this term should be lengthened as soon as a want of assiduity is noticed. If the delinquent fulfills all his obligations, he is to be released, and deprived only of his political rights, with interdiction of any public function, or of exercising commerce, if it is a case of a bankrupt."

It is evident that the subject I have chosen is too large to be adequately considered in a public discourse of reasonable length. The treatment of those guilty of crimes simply against the person, including homicide and murder, of sexual perverts, vagabonds, tramps, beggars, alcoholics, *et id genus omne* must be passed over. Alcoholism and prostitution exist and will exist. What shall be done with alcoholics and prostitutes are questions of great importance and problems that the medical profession should attempt to solve. These problems can not be considered here; but I can not refrain from a brief discussion of capital punishment.

Capital punishment eliminates the criminal and relieves society from the dangers that might come from his possible posterity. The execution of criminals is a simple and easy method of extermination. Aside from the satisfaction of the idea of retribution, the advantages to society of extermination and the supposed deterrent effect of executions commended to jurists the severe punishments which were inflicted in the last century. Blackstone, writing about the middle of the eighteenth century, says that no fewer than one hundred and sixty crimes were made punishable by death in England by acts of Parliament. The cruel and atrocious tortures and punishments in earlier times, mainly the offspring of fanaticism, may well excite our horror. The Inquisition, with nearly three hundred and fifty thousand victims between 1491 and 1808, the burning of persons accused of witchcraft at Salem in 1691 and 1692, are shocking examples of legalized cruelty. At the present day, capital punishment is practically limited to the crime of murder.

It is pretty generally conceded that a man has a moral right to take the life of another in defense of his own; but have we a moral right to take a human life, either in the exercise of retribution, to prevent subsequent harm at the hands of the criminal, or to deter, by example, others from taking life? If it is criminal for an individual to take the life of another from motives of vengeance, it is equally criminal for society to take a human life as punishment for crime. At times of great danger it may be necessary to sacrifice human life to preserve discipline; but this is a measure of self-defense. We certainly should be able to prevent a murderer from repeating his crime without committing a legalized murder. The only argument, to my mind, that remains in defense of capital punishment is that it may be deterrent.

The arguments advanced by the advocates of capital punishment are certainly very strong. Garofalo says that murders always increase in proportion as the severity of the punishment for this crime is relaxed; and he cites statistics from Belgium, Italy, Great Britain, Switzerland, and France in support of the view that the effect of capital punishment is deterrent. On the other hand, there are strong arguments in support of the proposition that capital punishment is not deterrent. That public executions are demoralizing and brutal, every one will admit. The moral insensibility of murderers is well known, as well as the bravado of those who pose as heroes and the emotional displays of those who profess repentance and "change of heart." MacDonald quotes a statement that, out of a hundred and sixty-seven persons condemned to death in England, a hundred and sixty-four had been present at executions.

The argument that I shall present against capital punishment, and one that I think can not be successfully controverted, is that the taking of human life as a punishment for crime is in itself a crime, is a relic of barbarism and unworthy of our present civilization. No physician can consistently countenance the taking of human life. When we can not and will not mercifully do this to put an end to suffering in cases of incurable disease, or in the case of dangerous and hopeless lunatics, much less can we approve of it as a punishment or to deter possible criminality in others. We may destroy the life of an unborn child to save the life of the mother; but then it is with extreme reluctance and repugnance for the act. Compared with acts of savage brutality, such as cannibalism, we may quote, with MacDonald, the words of Montaigne, who says, "it is more barbarous to kill a live man than to roast and eat a dead one." We need not go very far back to find acts provided for and sanctioned by law and so-called necessity which civilization would not tolerate at the present day. Before Pinel, in 1792, with his own hands removed the chains from lunatics at the Bicêtre, the conditions of confinement of the insane were horrible beyond description. The tortures of criminals and suspects a few decades ago were worthy only of savages, and many of the executions were brutal murders. When John Howard made his inspections of penal institutions in 1773, the prisons were hells upon earth. As scientific progress has brought about the wonderful reforms in the treatment of the insane, so the same spirit should remove the last glaring relic of barbarism, capital punishment. It is an unworthy reproach to science to assert that society has but one way of deterring the greatest of all crimes, and that is by repeating the crime itself under the cover of law. Even in the punishments which are necessary to the enforcement of discipline, the "golden rule" laid down by Pike should be observed: "Let them not afford an evil example of cruelty to the spectators."

Emancipation from fanaticism and bigotry is the first necessity in the intelligent treatment of crime. Fanaticism is responsible for the early persecution of scientific discoverers, such as Galileo, the persecution of the Jews, the massacre of St. Bartholomew, and the numberless crimes committed in the name of the divine right of kings. The Puritans landed in America in 1620 to escape religious persecution and to enjoy religious liberty, and they burned witches in 1692. No great progress can be made in the reform of criminal jurisprudence until the laws based on bigotry and intolerance of personal and religious liberty are removed from the statute books.

It is to the physician and the scientific student of crime that we must look for real reforms. The history of criminality is full of solemn warnings of dangers incident to existing systems in the treatment of crime, and the greatest of these is heredity. The history of *The Jukes* conveys this warning in the strongest possible manner. We are justified by public opinion in protecting ourselves from the dangerous insane by perpetual confinement. The dangers we have to provide against from the habitual criminal are much greater, as he is an enemy with more or less intelligence, acting with method and in concert with others. All criminologists agree that such criminals, when irreclaimable, should be put under perpetual confinement or surveillance. Dugdale says: "In dealing with the habitual typical criminals who are contrivers of crime, criminal capitalists and panders, where we can not accomplish individual cure we must organize extinction of their race. They must sternly be cut off from perpetuating a noisome progeny either by the propagation or perversion of a coming generation. The old laws attempted this extinction by hanging; but for us it must be perpetual imprisonment, with certain mitigations to guard against barbarity. For this class, congregate imprisonment is perhaps the most suitable."

Dugdale evidently did not care to suggest a method of organizing "extinction of their race"; but one less severe than hanging readily suggests itself. It would be not difficult to devise a method of sterilization of irreclaimable born criminals which would not offend sentimental public opinion; this to be applied, not as a punishment for any particular class or classes of crime, but merely for the protection of society, and after a full scientific investigation of every case.

In concluding my very inadequate treatment of the great questions considered in this discourse, I do not make any formulated suggestions; but it must be evident that criminology and penology should receive more attention at the hands of the medical profession. The State of New York is the birthplace of practical penal reform. Let her do her full share now in the good work! While it would be desirable to adjust our criminal laws so as to bring them into accord with the present scientific status of criminology, existing laws admit of important reforms. A scientific spirit might be infused into the prison commission if it included members of the medical profession. Physicians to prisons should study criminals according to modern methods and not simply prescribe for their bodily ailments. Much study and accumulation of material are necessary to bring criminal anthropology to a condition approaching a positive basis, and for this work criminologists look to the medical profession. As I have already said, I venture to hope that criminology and penology will not be neglected by the New York State Medical Association.

Original Communications.

THE DIAGNOSIS OF TUBERCULOSIS OF THE UPPER AIR-PASSAGES.*

By CLARENCE C. RICE, M.D.

It has seemed to me that it would be of more service to an association like this, composed of members of great experience, thoroughly expert in clinical diagnosis, to mention, as far as possible, the usual and unusual manifestations of tubercular disease of the upper air-passages, pointing out their similarities and dissimilarities to other pathological conditions, rather than to follow the beaten track, and endeavor in minute detail to tabulate the differential diagnosis between the ordinary tubercular and syphilitic ulcer, and between the tubercular enlargement and the benign or malignant neoplasm. The unusual manifestations of tuberculosis are, of course, the only difficult ones of recognition, and our purpose is served if we have described their laryngoscopic appearances.

Tuberculosis of the Nares.—I think it is of little importance for me to do more than to allude in the briefest way to tubercular disease of the nasal passages. I do not know that I have seen a case, although I think it is possible that we all may have removed small growths attached by a pedicle to the turbinated tissues which microscopically might have been tuberculous structure.

Nasal tuberculosis is an exceedingly rare disease. Willigk,† in four hundred and seventy-six autopsies of tuberculosis, found only one in which the nose was involved. In twenty-seven cases collected by Bosworth all but three were associated with pulmonary disease, and these may not have been tubercular. It manifests itself in two forms, one the ulcerative, which is preceded by tubercular infiltration in the form of small nodules. The ulceration is almost always found on the nasal sæptum or the floor of the nose. The other form manifests itself in small growths, usually as large as a pea, which are commonly attached to the turbinated tissues. If ulcerations become tubercular by surface inoculation, we should suppose that syphilitic ulcerations of the nose, which are common, might become inoculated in this way in cases of phthisis pulmonalis.

As to the diagnosis, we should be suspicious of any chronic ulceration of the nose which resists the effects of iodide of potassium, and which is associated with tubercular pulmonary disease. If, in addition to these symptoms, the secretions from the ulceration furnished tubercle bacilli, the diagnosis would be made. The microscope alone will determine the character of any neoplasm. Perhaps I ought to mention the possibility of the presence of lupus in the nose, which also is probably a tubercular process, since the tubercle bacilli have often been found in the ulcerations of lupus. It is possible that some of the ulcerative cases which have been called tuberculosis of the nares have been lupus. Lupus of the nasal mucous membrane is usually an extension inward from a facial cutaneous ulceration.

Tuberculosis of the Palate and Pharynx.—Tuberculosis of the pharynx is of more interest to us clinically than is nasal tuberculosis, because it occurs more frequently, because it produces symptoms which are very distressing, and because it is always necessary to differentiate between the tubercular ulcer of the mouth and pharynx and that of syphilis. Willigk, in 1,317 autopsies of tubercular cases, found the larynx involved 237 times and the pharynx once. Louis found four cases of pharyngeal tubercular ulceration in one hundred and twenty patients. It seems to be generally believed that tuberculosis of the palate and pharynx is usually associated with a general acute miliary tuberculosis, a process involving several organs of the body, rather than with the ordinary chronic pulmonary phthisis. Just why the acute miliary form should show a disposition to attack the palate, which almost always escapes the tubercular infiltration so commonly found in the larynx, we can not say.

Tubercular infiltration here is probably always secondary to deposits elsewhere, although we find cases reported where tubercular infiltration in other organs was not discovered until some time after it appeared in the pharynx. It is not often that we have an opportunity of watching the development of the miliary nodules before they break down into the ulcerative stage. Dr. Bosworth has seen two out of a total of five cases in which he was able to watch the miliary deposits in the soft palate for several days before ulceration appeared. The nodules remain not more than a week. The disease here as elsewhere appears in the two stages of infiltration, which is in the form of grayish-white nodules, and the ulceration which follows.

There is really only one other form of ulceration of the pharynx for which the tubercular can be mistaken, and that is the syphilitic; but when we remember that there are ninety-nine cases of syphilitic ulceration in the pharynx to every one of a tubercular character, we can appreciate how rarely tubercular ulceration is found in this location. The same diagnostic points which would be applicable to ulceration of the larynx are true of the pharynx, as the tubercular ulcer here has the same characteristic grayish-white surface, commencing usually in the soft palate, spreading laterally toward the pillars of the pharynx by the union of many minute erosions. If the deposit has come on rapidly and before the patient has become emaciated, there may be hyperæmia of the mucous membrane for a time, but this is quickly followed by the marked pallor which is so characteristic.

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* Read before the American Laryngological Association at its seventeenth annual congress.

† Willigk. *Sectionsergebnisse an der Prager path.-anat. Anstalt.* From February 1, 1850, to February, 1852.

All authors speak of the great amount of pain which accompanies tubercular ulcers of the pharynx. There should be no difficulty in differentiating tubercular ulceration of the fauces from epithelioma, and we need hardly speak of the differential points. There never is tissue thickening enough associated with tuberculosis of the pharynx to resemble a malignant neoplasm. There is probably a time when tubercular infiltration of the velum is accompanied by the same semi-œdematous swelling of the tissues seen in the larynx.

Tuberculosis of the Larynx.—It will probably be admitted by all that in the great majority of cases the diagnosis of tuberculosis laryngis, by means of the laryngeal mirror alone, in the hands of men accustomed to examine the upper respiratory passages, is a comparatively easy task.

In typical cases the appearances presented are so characteristic and striking and so different from those of any other form of laryngeal disease that a laryngologist of but little experience should have no difficulty in determining the kind of inflammatory process. So true is this that typical cases of laryngeal tuberculosis are always demonstrated to the pupil by the instructor, because the appearances seen in the mirror are so characteristic and uniform. And it is to be expected that the pathological appearances of this disease would be easily distinguishable from other forms of inflammation of the larynx, when we remember that this destructive process is entirely unique in character and that it involves special structures. It is easy, however, to understand why authors of large experience in laryngeal disease should hold such widely different opinions in regard to the ease of diagnosticating tuberculosis of the upper air-passages. It is because, although in the great majority of instances we can read the name "tubercular laryngitis" in the mirror as soon as it is held in position, there are cases which may easily be confounded with syphilis or with growths of the larynx. We should think that eighty per cent. of the cases could easily be diagnosticated by a skillful clinician, and that in the remaining twenty per cent. considerable care would need to be exercised before an authoritative opinion was stated, and that in perhaps one half of this twenty per cent. a decision could not be reached without the aid of the microscope or the employment of iodide of potassium.

Von Ziemssen's statement that "a tubercular process in the larynx can not be definitely recognized as such by ocular inspection in those cases in which the diagnosis is unaided by a previously existing pulmonary disease," need not be considered of great moment, because we do not often see tuberculosis of the upper air-passages except as it accompanies the same disease of the lungs. We should rather concur with Lennox Browne, who says that "we know of no disease in which with the laryngoscope we can be so sure of our diagnosis." Nevertheless, we shall see many cases where it will be impossible by ocular inspection alone to decide as to their true character. The examination of the larynx, the careful history of the patient, the microscopical investigation, and the test of the iodide of potassium must all be carefully employed, and after all this there will be a few cases where we shall have to depend, as Dr. Bosworth says, upon the "diagnostic instinct."

I presume we are all in the habit of making the diagnosis of laryngeal tuberculosis very frequently before examining the larynx at all. The emaciated condition of the patient, the chronic cough, the fever, the huskiness of voice, the shortness of breath, the pain in swallowing, all these point to tuberculosis of the lungs and larynx with great directness, and yet teachers before a class of students know how dangerous it is, even with nearly all these conditions present, to give an opinion until the lungs have been examined and the larynx carefully inspected.

Since nearly all of the tuberculosis of the upper air-passages involves and is confined to the larynx alone, it will be wise to consider the diagnosis of tubercular laryngitis more carefully and from *three* points of view. First and very briefly, we may speak of the diagnostic points of the ordinary or typical cases; second, we shall endeavor to mention those very early appearances in the larynx which are thought to be significant of an incipient tubercular laryngitis, and which are sometimes present in the larynx before it is easy to recognize any disease in the lungs, or before bacilli can be found in the expectorations; and third, it will be well to cite the irregular cases which are difficult of diagnosis, because they coexist with other diseases of the larynx, or because they present appearances not more typical of tuberculosis than of some other pathological condition.

First, the diagnosis of the typical cases. Can any disease present appearances more easily recognized than that tumefaction of the larynx due to tubercular infiltration, that pale, boggy semi-opaque, partly œdematous, partly inflammatory swelling of the arytænoid cartilages which has given to them the name of "club-shaped," and to the epiglottis that of "turban-shaped"? We can think of nothing that such enlargements, if they are bilateral and involve both the epiglottis and the arytænoids, resemble, unless it be an œdema of the larynx; but a diagnosis between these need hardly be considered because the cases are so widely different in their entire history, the one being an acute and the other a chronic process. Lennox Browne says that tubercular infiltrations have not the clear transparency of an œdema, nor the active inflammation of simple laryngitis, nor the hyperplastic infiltration of syphilis. This states it in a correct and graphic way. When tubercular infiltration attacks only a single arytænoid, then the question will arise as to whether the process may not rather be a syphilitic one, or an idiopathic perichondritis, or possibly some variety of neoplasm. Unilateral enlargement of the crico-arytænoid articulation is a very rare manifestation of tuberculosis. In single swellings of this kind the condition of the lungs, the presence of bacilli, and the effect of iodide of potassium will alone enable us to call the process by the proper name. In my experience, tubercular infiltration involving the submucosa over both arytænoid cartilages is much less likely to progress to a perichondritis and ankylosis of the joint than is a tubercular process confined to one arytænoid.

The remarkable anæmia of the larynx, and that, too, before the patient has become pale and emaciated, is another characteristic sign. We should not forget that the color of the mucous membranes usually bears a close relation to the general condition of the patient. We expect a pale mucous surface in a chlorotic subject, but the discrepancy between the two in tuberculosis laryngis is remarkable.

It may be true, as Cohen * says, that "the earliest recognizable state of the *acute* form of laryngeal tuberculosis is almost always manifested by marked congestion of the mucous membrane, and the earliest recognizable stage of the chronic and much more frequent form is almost always manifested by marked pallor of the mucous membrane." By the acute form we understand the kind of laryngeal tuberculosis which is associated with acute miliary tuberculosis of the lungs and with a general tuberculosis. We doubt if there is frequently an opportunity of witnessing a diffuse miliary infiltration of tubercle within an acutely congested larynx; while pathologically it seems quite possible that there might be infiltration and breaking down before the larynx became anæmic, we do not believe that clinically it is often seen. Are these the so-called "catarrhal" ulcerations which some observers think not uncommon? We confess having but little faith in their frequent existence.

If a typical case is seen during the first stage of infiltration, and can be watched while the tissues are undergoing a carious process, the ulcerations can hardly be confounded with those of any other disease. It is only when a small ulceration appears on the vocal band and remains limited in extent without affecting the cord generally, or when the surface of the bands has been changed by strong medications or surgical treatment, or when sprouting of new tissue has occurred at their edges or over their floor, that it becomes difficult to classify them.

We do not think it of importance to consider at any length whether the ulcerations occurring in tuberculosis of the larynx and accompanying pulmonary phthisis differ in their pathology, and hence in their clinical aspect, because we believe it is generally admitted that the older attempts of pathologists to classify ulcerations of the larynx coexisting with pulmonary consumption into such divisions as the aphthous, the diphtheritic, and the early catarrhal ulcer, which later becomes tubercular, have not been proved to be founded on correct pathology or on consistent clinical behavior.

Heinze, in the examination of laryngeal ulcers occurring in tubercular laryngitis, stated that eighty-three per cent. were tuberculous and seventeen per cent. non-tuberculous; but this was in 1876. We believe at the present day, with the better methods of microscopical examination, he would have decided that a much larger proportion were tubercular.

We notice that most authors of the present day very wisely do not mention any necessity of diagnosticating different kinds of ulcerations in tubercular laryngitis. We think that the belief in the existence of different varieties of ulcerations in tubercular laryngitis was entertained more because of the various shapes they assume than because of any differences they presented microscopically. We do not mean to speak of the pathology of tubercular ulcerations of the larynx, but we suppose that the day has gone by when it is commonly believed that ulcerations the result of a simple catarrhal process are converted into tubercular ulcerations by inoculation at the surface.

Dr. Solly,* of Colorado, has written an instructive article on tubercular laryngitis, because his statistics have been carefully prepared. In two hundred and fifty cases of pulmonary tuberculosis there were forty-five in which the larynx was involved; twenty-five of these forty-five had not broken down into ulceration at the time of the first examination. In his cases the ulcerations were situated upon the true cords in fifty per cent., upon the arytænoids in forty-five, in the interarytænoid commissure in thirty, upon the epiglottis in the same proportion, and upon the ventricular bands in twenty per cent.

It would be an endless task to describe in detail the appearances of the many-shaped ulcerations of laryngeal tuberculosis in their stages of progress. Certain terms are commonly used to describe them, such as "moth-eaten," their resemblance to the surface of cut bacon and to the track of earthworms in wet sand, and their "mouse-nibbled" appearance.

Bosworth, in his text-book, lays great stress upon the point that there is very little loss of tissue attending a tubercular ulcerative process, because the tubercular infiltration in the deeper structures all the time compensates for the destructive process going on at the surface. This is not always true, because we frequently see the ulcerative surface depressed below the surrounding tissues, but it certainly describes accurately one characteristic of tubercular ulcerations. The grayish ulcer of tuberculosis, covered sparsely with clinging secretion, presenting feeble indications of inflammatory action, hardly depressed at all below the surface, spreading laterally but not in depth, and uniting with other small ulcerations, should not be difficult to recognize.

We think that the tertiary ulceration of syphilis occurring in a debilitated patient is the one which in appearance is most closely akin to tubercular ulceration.

We do not think that the tubercular ulceration is commonly difficult to diagnosticate from the ulcer of syphilis when the latter occurs in a fairly healthy patient.

Now, in regard to the earliest manifestations of tubercular laryngitis: Are there any signs which may be considered as pointing significantly to its development before the stage of infiltration occurs? I think that we are all suspicious of localized anæmias of the hard and soft palate in a pharynx which otherwise presents a healthy appearance. With this pallor we have noticed enlarged capillaries merging from the different portions of the palate toward the uvula.

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* Cohen. *American Journal of the Medical Sciences*, January, 1883.

* Solly. *Therapeutic Gazette*, November 15, 1893.

The enlargement of the papillary layer in the interarytænoid commissure, however slight it may be, is also a suspicious sign.

I have sometimes detected, I believe, the very commencement of change in this location, hardly noticeable without the most careful inspection, when the attention was directed toward its possible existence by imperfect approximation of the vocal bands posteriorly rather than by any swelling. Feebleness of action of the transverse or arytænoid muscle or of the thyreo-arytænoid muscle are points to be considered.

In a paper read before the Academy of Medicine some weeks ago on The Importance of Administering Iodide of Potassium in Cases of Laryngeal Disease of Doubtful Diagnosis, I commented on Dr. Wright's review of Chiari's paper entitled Structure of So-called Fibromata of the Vocal Bands. As will be remembered, the ground taken by the author was that these growths are inflammatory and not *neoplastic*, since they show oftentimes inflammatory phenomena. Dr. Wright says in his review that it is "a superficial, misleading, and dangerous proceeding to calmly describe growths as fibromata, myxomata, etc., when they are, in the vast majority of instances, nothing but different manifestations of chronic inflammation." If these neoplasms are the result of the different well known inflammatory processes, we must consider their possible relation to a tubercular infiltration; that some of them are the result of a syphilitic dyscrasia can not be doubted, and there has long been a feeling that so-called simple papillomata of the vocal bands were often nearly related to tubercular infiltration, so that it is quite possible that we may consider recurring papillomata an early manifestation of tuberculosis.

I do not remember to have seen that tubercular tissue has been found microscopically in well-marked papillomatous growths, but I have a record of two cases in which simple warty papillomata existed in the larynx two and four years before tubercular laryngitis appeared. If one or more of these conditions which I have mentioned are found, we should naturally examine the lungs for evidence of disease there, and the expectorations for tubercle bacilli.

The slightest appearance of bogginess of the arytænoids is always, I believe, significant. We frequently see marked congestion of the arytænoid cartilages in a larynx perfectly normal otherwise, the arytænoids themselves being firm and hard in appearance; this is also suspicious of an incipient tuberculosis. Localized congestions are to us suspicious as indicating the seat of infiltration prior to the stage of swelling.

The third division of the subject—that is, the difficulty of diagnosis because of the coexistence of tubercular laryngitis with other diseases, or because of the unusual manifestations which tubercular laryngitis sometimes presents—needs now to be spoken of.

It is unquestionably true that syphilis and tuberculosis of the larynx coexist frequently. How often do we listen to a history of syphilis acquired early in life and find that pulmonary tuberculosis has followed later. Is it not possible that a patient may have at the same time pulmonary tuberculosis and syphilitic ulceration of the larynx?

In 1889 I called attention to the most marked case of this kind I had ever seen. In such cases the presence of lung disease and of tubercle bacilli will be considered the convincing points.

An unusual manifestation of tubercular ulceration of the larynx, and one very rarely seen, is the adhesion between approximating ulcerative surfaces. This is common enough in syphilis. I referred to such a case in a paper read before this society in 1889. The adhesion was between the anterior ends of the vocal bands.

Cohen[*] speaks of a similar case, and Ingalls also refers to the possibility of adhesive inflammation between the vocal cords. My case was diagnosticated tubercular because the patient had pulmonary tuberculosis and because iodide of potassium had no effect upon it whatever. Still we admit the possibility of its having been syphilitic.

Other unusual manifestations of tubercular laryngitis, and difficult of diagnosis because of their infrequency, are several forms of new growths. We know that in tubercular laryngitis there is very slight reparative power. Ulcerations show but little tendency to throw out from their bases or edges connective-tissue hypertrophy. So much are we impressed with the feebleness of tubercular structure that when we see any disposition toward the formation of granulation tissue we are inclined to believe that the ulceration is other than tubercular.

Dr. John Mackenzie divides these neoplasms into three groups: First, the granular hyperplasiæ, the most common, which differ in no respect from ordinary granulation tissue. Occasionally we see this tissue in quite a prolific state springing from the surface of ulcerations and occluding the larynx to a marked degree, but it usually degenerates before any necessity to open the trachea occurs. These may occasionally resemble malignant growths, but there is a much stronger resemblance between malignant growths and *syphilitic* hyperplasias.

I have already referred to the wartlike excrescences most frequently seen in the interarytænoid commissure. Stoerk[†] considers them very characteristic of incipient tuberculosis, and says they are connective-tissue hypertrophy in the neighborhood of the congested arytænoids. Lennox Browne[‡] thinks that they are quite as often seen in connection with syphilis, or even in chronic laryngitis. My observation is that they are far more significant of tubercular disease than of syphilis, and I see but rarely cases of simple chronic laryngitis which are accompanied by these.

These papillary excrescences are very closely allied histologically to the laryngeal papillomata found on the vocal bands, and while they are commonly supposed to be caused by the vascularity of a simple catarrh, yet they are found in the anæmic condition of tuberculosis.

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[*] Cohen. *Diseases of the Throat*, p. 505.

[†] Stoerk. *Klinik d. Krankheiten des Kehlkopfes*, etc., Stuttgart, 1880, S. 282.

[‡] Browne. *Diseases of the Throat*, p. 377.

A third form of growths which are a manifestation of tubercular laryngitis are the isolated, smooth, round neoplasms composed of tubercular nodules. They appear beneath an unbroken membrane. Dr. John Mackenzie* described them in 1882. Dr. J. Pason Clark,† of Boston, has just looked up the literature of the subject. He has collected forty-two cases. He says that of this number the histories of thirteen were not complete, but probably the majority of these were tubercular. In twenty-six of the forty-two the growths were detected during the life of the patient, and of these the lungs were involved in seventeen, and of the nine remaining patients five had phthisis later on, which leaves four cases in which pulmonary signs were not discovered until perhaps a year after the removal of the growth.

These tumors rarely break down into an ulcerative condition, are usually sessile, and the color of the overlying mucous membrane is not much changed. They are more commonly seen on the lateral wall of the larynx than anywhere else.

Clark says that tubercle bacilli can usually be found in them. These growths resemble fibromata and sometimes papillomata, and may be strongly indicative of malignant disease. If they are associated with pulmonary disease we should be very suspicious of tubercular tumors, but the microscope must be depended upon to determine their true character.

It is interesting to note that in Dr. Mackenzie's case of tubercular tumor of the trachea the patient died of carcinoma of the stomach, and that secondary cancerous deposits were found in many organs of the body, but that the lungs were tubercular. The diagnosis in Dr. Mackenzie's case was made with the microscope, and the growth contained an aggregation of distinct tubercular nodules. The mucous membrane covering the growth was unbroken; the case was supposed to be malignant until the microscope showed its true character. I myself have seen two cases in my practice, both of which were demonstrated to be of a tubercular structure by the microscope, one in a man forty-eight years of age, in which the growth sprang from the lateral wall of the larynx. It was as large as a filbert. The patient had advanced pulmonary disease, but no other laryngeal lesion. The growth was unbroken until I removed a section for microscopical examination. It was quite hard. The ulceration caused by cutting remained unhealed, but did not enlarge. The man died in about six months after I first saw the growth.

The second case was in a young woman of twenty-five. The growth, of the size of a large pea, was attached to the left border of the epiglottis. I took it off with a loop guillotine, and the ulceration healed. The patient has intralaryngeal ulcerations and well-marked lung trouble, but she is not failing, and the condition of the larynx is improving.

I have endeavored to mention both the usual and unusual manifestations of laryngeal tuberculosis, and to dwell somewhat upon their respective values from a clinical standpoint. It is hardly necessary to put down here in a tabulated form the distinguishing points, since they can be found so well arranged in the text-books.

I have already emphasized the fact that tubercular infiltration and ulceration, in contradistinction to other lesions of the larynx, are almost always associated with a very anæmic condition of the mucous membrane. Tubercular infiltration is apt to be symmetrically bilateral, while syphilitic lesions, malignant disease, or an idiopathic perichondritis are localized. Not only does tubercular infiltration involve both arytænoid structures, but the swellings are whitish-gray, while in unilateral perichondritis, non-tubercular, the process is an acute one, and the surfaces are apt to be red and tender.

The amount of pain in tubercular laryngitis is considered a valuable diagnostic point, and it seems to be the general experience of observers that there is more discomfort associated with tuberculosis of the larynx than in any other disease of this location. This pain is specially marked in the swallowing of fluids, but is not present to any great extent except in swallowing, whereas in syphilis there is much less pain at any time, while in epithelioma there is less pain, but it is constant, even when the larynx is not moved in deglutition. A greater infiltration of the tissues is characteristic of malignant disease, and the neoplasm is surrounded by a larger inflammatory areola. Lack of motion of the vocal band on the affected side, without involvement of the crico-arytænoid articulation, is rather characteristic of epithelioma. The amount of stenosis of the glottis is much less in tuberculosis than in syphilis or malignant disease, and seldom requires tracheotomy. Writers always mention the cachexia associated with cancer. The voice is affected differently in tuberculosis and in syphilis. In syphilis it is a rough hoarseness, while in tuberculosis the voice is feeble and aphonic.

Theoretically the tubercular ulcer is very superficial, while that of syphilis is deep. The edges of the tubercular ulcer are not well defined, and merge into the unbroken surface without change of color, while the syphilitic ulcer has a sharply localized periphery surrounded by an inflammatory areola. The destructive process in tuberculosis of the pharynx is slow as compared with that of the tertiary ulcer.

The tubercular ulcer rarely secretes pus, which is common with the syphilitic.

If these points are not enough, the evidences of pulmonary disease in the one case, together with fevers, night sweats, etc., will enable one to make a diagnosis without the assistance of the microscope or iodide of potassium.

The Medical and Surgical Reporter.—Under the heading of New York as a Medical Centre, the *Medical News* announces that the *Medical and Surgical Reporter* has returned to its old home in Philadelphia.

The Death of Sir Thomas Longmore, C. B., honorary physician to Queen Victoria and for many years professor of military surgery in the Army Medical School, is announced in the London journals. He died suddenly.

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* Mackenzie. *Archives of Medicine*, October, 1882.

† Clark. *American Journal of the Medical Sciences*, May, 1895.

SURGICAL TREATMENT OF LARYNGEAL TUBERCULOSIS.*

By J. W. GLEITSMANN, M.D.

Although the title of the discussion before this association refers to tuberculosis of the upper air-passages in general, I shall confine myself in the part assigned to me to the larynx, and shall mention the pharynx only incidentally, as the surgical treatment of laryngeal tuberculosis has elicited the most widespread interest, and as I take it to be the sense of this meeting to have mainly this subject fully ventilated and discussed.

When we speak of the surgical treatment of laryngeal tuberculosis we generally understand under this term curettement with single or double curettes, and the consideration of these measures will occupy the greater part of this paper. But there are other procedures employed in this affection which have their advocates, and which must not be lost sight of in a complete review of the subject. Surgical treatment, broadly speaking, is either endolaryngeal or extralaryngeal. Endolaryngeal treatment comprises: 1. Incision with knives or properly curved scissors. 2. Curettement. 3. Submucous injections. 4. Electrolysis. 5. Galvano-cautery. Extralaryngeal measures are laryngotomy with excision of the diseased part, extirpation of the larynx, and tracheotomy. Intubation also has been performed for laryngeal tuberculosis.

To my knowledge, no attempt has heretofore been made to collect the literature on these different subjects. When I have endeavored to do so, I do not lay claim to any completeness of the data furnished, but I thought a list of these quotations would be of sufficient value to have them appear in an appendix to this paper; besides, quite a number of interesting data have been found which deserve not to go unnoticed. I shall mention here only a few instances.

The first attempt at surgical treatment was made as early as 1869 by William Marcet, who made punctures into tubercular infiltrations, but whose work did not elicit sufficient attention till Moritz Schmidt published his method of operating in 1880. Another instance refers to extirpation of the larynx. As we all know, the late Billroth was the first who extirpated the larynx for carcinoma on the 31st of December, 1873, which operation is described by Gussenbauer in the *Archiv für klin. Chirurgie*, 1874. But Pinçonnat quotes in his brochure *De l'extirpation du larynx*, Paris, 1890, the statement of Foulis, made at the International Congress, London, 1881, that P. H. Watson, of Edinburgh, extirpated the larynx of a patient with syphilitic stenosis in 1866, which case was not published at the time. Therefore Langenbeck, who proposed the operation to a patient in 1854, which proposal was declined, is right in saying (*Berliner klinische Wochenschrift*, No. 33, 1875) that the honor belongs to Billroth, who first made the operation for malignant tumors and gave the indications for its performance. In this connection I may state that I have found eight total and seven partial extirpations of the larynx for tuberculous affections in the literature. Of the eight total extirpations, in four the diagnosis of tuberculosis was made before the operation, two were made on account of lupus, two had been diagnosticated as carcinoma; of partial extirpations, five were made for tuberculosis, one for lupus, one for supposed carcinoma.

When we now consider the different operative methods of surgical treatment *seriatim*, it is but natural that curettement should engage our greatest attention. It is the most modern treatment of laryngeal tuberculosis, and is so at variance with opinions previously held that it is not to be wondered at when it finds many opponents up to the present time, this country not excepted. But the number of its adherents increases every year, and only very few who have actually performed curettement have expressed their disapproval. Among seventy publications I have collected I have found only about six writers who speak indifferently or unfavorably about it.

The most rational way to arrive at a fair and unbiased opinion of the value of curettement will be when we consider both sides of the question, and by doing so I hope to be able to refute some objections raised against it. It can not be expected, from surgical treatment of the larynx, that it will directly exert a favorable influence on the almost always present pulmonary complication; but we are justified in speaking of a cure of the larynx when, in spite of the continuance of the pulmonary disease, the laryngeal symptoms have subsided, when the larynx bears a normal aspect, and, furthermore, when no trace of the disease is found at a post-mortem—conditions which are established beyond doubt and are enumerated in the literature. Another argument against curettement is that relapses can not be prevented, an assertion which can not be contested. By curetting the larynx we do not pretend to remove the tubercular diathesis; we can only attempt either to clean a torpid, infectious ulcer and put it in the best possible condition to cicatrize, or to excise infiltrated tubercular tissue, which sooner or later would break down and lead to vast destructive changes. There is at present no treatment of laryngeal tuberculosis in use which insures against relapses, and for our success we are always dependent on the character of the disease, which is often very treacherous and misleading. But with increased experience and the endeavor to remove all diseased parts till healthy tissue is reached, the relapses with curettement will become less frequent and the results will certainly compare favorably with other methods of treatment.

A further objection is the limitations to which curettement is naturally confined. It is true that we will meet with failure, and ought not to operate on patients with advanced lung disease and hectic, or patients with disseminated tuberculosis of the larynx presenting one large ulcerated surface, nor on such with severe laryngeal stenosis. But it has never been maintained by even the most ardent advocates of the curettement that it is suitable for all cases of laryngeal tuberculosis, and the more precisely the indications are drawn, the better it will be for the propagation of the operation and also for the patient. But the reason that an operation has a limit beyond which its performance is injudicious is no ground to condemn it as a whole, especially when we know that by its execution untold suffering has been relieved and some lives have been saved which otherwise would have succumbed. By the same force of argument we could doubt the propriety of extirpation of the larynx for malignant tumors, as also this operation has its limit and is not in favor with surgeons when the growth has become extrinsic. I myself have in more than one case refused to operate, although urgently requested to do so, when I foresaw the futility of such an attempt. I show you here the arytænoid cartilage spontaneously expelled by a patient who was sent to me for curettement, which, however, I declined.

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* Read before the American Laryngological Association at its seventeenth annual congress.

Two writers profess to have observed outbreak and hastening of the pulmonary process after curettement. Although the possibility of such an occurrence can not be denied, it is just as likely that it is a mere coincidence, and none of the other operators with a large material have met with a similar accident. Finally, objections of lesser importance are hæmorrhage following curettement, and the painfulness and difficulty of the operation. A few cases of severe and also of prolonged bleeding have been described after curettement of the epiglottis and of the ventricular bands, and by some writers electrolysis is recommended for the dense and hard tubercular infiltrations of the latter. Bleeding can be arrested by a styptic solution of lactic acid and perchloride of iron, and no lasting injury to the patients has been reported. The painfulness of the operation can not be considered an important factor in so serious an affection, the more so as it can be almost entirely obviated by repeated applications of strong solutions of cocaine. A still more effective manner to produce anæsthesia in extensive operations and sensitive patients is the injection of cocaine into the tissue to be removed with a suitable syringe. The difficulty of an operation ought never to be an objection to its execution, so long as the operation is justifiable and within the bounds of technical skill, and when once attempted sufficient experience will soon be gained to master the different manipulations.

After having analyzed the objections raised against curettement I shall speak of the advantages it offers and its indications. Curettement is a rational proceeding and based on sound principles of surgery. Its adoption is entitled to the same consideration as the excision of a tuberculous joint by the surgeon. The latter does not pretend to relieve by his operation the tubercular diathesis or to cure a concomitant pulmonary phthisis, but he is intent to remove a diseased area, a focus of infection, which is a constant drain on the already debilitated patient. The same we are doing by curettement of the larynx, a locality in which, with few exceptions, the morbid affection runs a more rapid course than in other parts of the body, a locality whose lesion is accompanied with more suffering than that of an advanced pulmonary process, and materially contributes to hasten the dissolution of the sufferer. And be it said right here that in the opinion of the majority of operators, as well as my own, curettement in properly selected cases is more effective, quicker in its action, and better in its results than other methods of treatment. But curettement is not only justifiable on theoretical grounds; the improvement or cessation of the laryngeal disease can not but help to influence favorably the pulmonary affection. It will not be doubted that a patient with laryngeal and pulmonary tuberculosis combined has less chances of recovery than one with the latter alone. If we promote cicatrization of a tuberculous ulcer by curettement, if we excise infiltrations containing bacilli, we certainly put the patient in a better position to battle with his pulmonary affection. Therefore surgical treatment ought not to be delayed, as it naturally needs to be less energetic and will yield better results when a smaller area is involved. It is of especial importance to adopt vigorous measures and to be indefatigable in their execution in cases of primary tuberculosis, which, although rare, undoubtedly occur.

One of the most distressing symptoms of laryngeal tuberculosis is dysphagia, caused by the infiltration of the arytænoid region, and it is this particular feature of the disease which is best adapted for curettement. Being more frequently bilateral than unilateral, the removal of the hard, dense swelling by the Krause-Heryng double curettes can often be accomplished in one sitting without injury to the patient. It is astonishing how quickly the wound made by the operation heals, and if the excision has been thorough the tissues in many cases cicatrize rapidly and assume a normal aspect, showing their natural outlines. The suffering of such patients, due to more abundant nerve proliferation in tubercular disease, as demonstrated by Gouguenheim and Balzer, is so intense, and the relief granted as a rule so great, that arytænoidectomy is in favor with most operators in cases in which otherwise curettement is contraindicated—viz., in active pulmonary disease with hectic. Beyond the benefit obtained in relieving the pain, a much more important object is attained at the same time, since we find that with the disappearance of the dysphagia the patient at once is able to take a sufficient amount of nourishment, leading in the more favorable cases to general nutritive improvement, while even in far-advanced concomitant pulmonary disease the latter follows a much slower course.

Surgical treatment is also followed by improvement of the voice, cough, and respiration—results which are the natural consequences of the cicatrization of ulcerations and removal of obstructive lesions.

When summarizing now the indications for curettement, it is to be recommended—

1. In cases of primary tuberculous affections without pulmonary complication.
2. In cases of concomitant lung disease which is either in the incipient stage or has at least not progressed to softening and hectic conditions.
3. It is best adapted for circumscribed ulcerations and infiltrations of the larynx especially.
4. For the dense, hard swelling of the arytænoid region, the ventricular band, the posterior wall, for tuberculous tumors, and for affections of the epiglottis.
5. In advanced lung disease with distressing dysphagia

resulting from infiltration of the arytænoids, curettement is justifiable as the quickest means to give relief.

Contraindications are:

1. Advanced pulmonary disease and hectic.
2. Disseminated tuberculous disease of the larynx, leaving little or no area of healthy tissue.
3. Extensive infiltrations producing severe stenosis when tracheotomy is indicated.

We will also not recommend surgical treatment to nervous, distrustful patients, who lack the necessary perseverance or confidence in their physician. On the other hand, it is often surprising how willingly patients, knowing their precarious condition, submit to the operation; how cheerfully they permit the necessary manipulation when the physician, guided by the purest motives, devotes his best energies to the relief of the sufferer.

I fully agree with Heryng when he says that the operation may perhaps not become the common property of all specialists, even when approved by them in principle. Although the necessary skill can be easily acquired by experience, the treatment of such patients requires labor, and taxes the energy of the physician beyond the ordinary limit, and often the only satisfaction we derive from our work is the consciousness of having done our full duty.

As to the operation itself, it is not necessary to go into details before an assembly which I have the honor to address. Incisions into the infiltrated tissues, as recommended by Moritz Schmidt, have been followed by disappearance of swelling and ulcerations, as demonstrated by this operator. But the incisions often heal before resorption has taken place, and the observation that tuberculous lesions cicatrize spontaneously, as well as after surgical proceedings, led to the adoption of curettement. Heryng's single curettes are best suited for cleaning and scraping of ulcerations; Krause's double curettes and Heryng's rotary curettes for excision of tuberculous infiltrations. So far as my experience goes, I have met with no difficulty in excising the arytænoid region or the ventricular bands, but found it a harder task to attack the posterior laryngeal wall and the epiglottis. Subglottic lesions can be operated upon with Scheinmann's forceps, and with laterally bent forceps an attempt may be made to reach also Morgagni's ventricles. As a rule, it is advisable to operate on patients when inmates of a hospital, as they need rest and have better attendance in case any accident—for instance, bleeding—should occur. The after-treatment has to be carried out carefully, and applications of lactic acid or pyoctanin in one- to two-per-cent. solutions have to be made daily till cicatrization is completed, which I saw taking place in some cases after one week, in others after three to four weeks.

The results of curettement are often dependent upon factors we can not control. Aside from the concomitant pulmonary disease and from the local laryngeal condition, the constitution of the patient and the character of the infection has a great deal to do with the prognosis. Ulcerations which are well defined, not too large in area, give a better prognosis than extended, shallow ulcerations. Dense infiltrations, which are generally localized, are more favorable than œdematous conditions. The smaller the number of tubercle bacilli in the removed tissue the better it is for the patient. Of course, an element of greatest importance is the skill of the operator, his endeavor to remove all diseased infected tissue, and the attention he bestows on the after-treatment.

Only a few operators publish the final results obtained by curettement, and in some instances the data furnished are so meagre and incomplete that they can not well be utilized to judge about the ultimate condition of the patients. The reasons for these shortcomings are manifold; the principal one being probably the difficulty of procuring information from patients after a longer interval. I shall content myself to refer briefly to the statements made by Heryng, Gouguenheim, and Krause, who altogether treated four hundred and fifty-five patients. Heryng operated before 1887 upon twenty-eight patients, two of whom were alive in 1892 and 1894; in eight, who died before 1890, the larynx remained in a healthy condition from one to three years. Of two hundred and seventy cases operated between 1887 and 1894, eighteen were free from laryngeal disease from one to four years. Gouguenheim operated on eighty-six patients from 1893 to 1895. He made fifty-eight arytænoidectomies, of which twenty-five patients affirmed themselves cured and thirty were improved; five of the latter remaining so when seen after one year. In twenty-seven patients the posterior laryngeal wall was operated upon; in seven of these the voice returned in a very clear manner; in ten the improvement was very noticeable. Krause had treated seventy-one patients up to the close of the year 1888, of which number forty-three were cured, or materially improved, or free from complaint. At the date of publication, May, 1889, twenty-eight remained in the same condition as they were when discharged; seven had died; the fate of the remaining eight could not be ascertained.

My own experience is limited to a much smaller number of cases, as I procured Heryng's rotary curette only about a year ago, and previously used other instruments in but two cases. But the immediate relief the patient felt and the proportionately fair results may justify a short statement: The number of patients operated upon with the double curettes was twelve, all of whom had pulmonary complication. There were two operations for infiltrations of the posterior laryngeal wall alone, one for such with affection of the ventricular band combined; four arytænoidectomies; three arytænoidectomies and excision of the ventricular band, and two of the latter alone. Arytænoidectomy had to be performed a second time on two patients on account of recurring infiltration. One patient died from heart failure, another from his advanced pulmonary disease. Four patients are without recurrence of laryngeal disease from six to ten months, one of whom had affection of the posterior laryngeal wall, another of the ventricular band, and two of the arytænoid region.

Several years ago I adopted surgical treatment with a patient with incipient pulmonary phthisis, who soon afterward left for Europe and has remained there since. I heard accidentally this winter that he was doing well, but as I can not authenticate the report the case must be left out of consideration altogether. But I can refer to one case of most extensive primary pharyngeal and laryngeal tuberculosis which is permanently cured, and which has already been reported at the Berlin International Congress, 1890, and has been examined at different periods by my New York colleagues. I will not weary you with the history of this interesting case, and will only state that the first tuberculous ulcer appeared on the base of the tongue in May, 1888, and that during the summer the left tonsil, the soft palate, the whole lingual surface of the epiglottis, and the left aryepiglottic fold became ulcerated. Most energetic treatment brought the affection to a standstill the latter part of October, and except for a slight ulcer of the palate and left tonsil during the winter of 1888 and 1889, which soon healed under appropriate treatment, the woman has been in perfect health ever since. The cicatrices of the palate and aryepiglottic fold are plainly visible, and were last seen by members of the New York Academy, November, 1894.

It is my full conviction, and I am corroborated in my belief by the opinion of other colleagues who saw the patient at different times, that she would not have recovered by any other means but the surgical treatment. I beg to repeat here what I have said on another occasion, that even if I had never succeeded in relieving another patient, she would nevertheless prove a living example of the benefit derived from surgical treatment, without which she undoubtedly would have died years ago.

Having already transgressed the limit of the allotted time, I can devote only a few remarks to the remaining chapters. Submucous injections into the diseased epiglottis, the aryepiglottic folds, the arytænoid region, etc., were first made by Krause and Heryng during the summer of 1886, and have been practised more or less ever since. A valuable communication regarding this method of treatment has been contributed by our member, Dr. Major, who advised the injections to be made more frequently and to be repeated at shorter intervals. Several months ago Dr. Chappell, of New York, began submucous injections on an extensive scale, and the results obtained by him so far are certainly very encouraging. While the former operators used chiefly lactic acid, Dr. Chappell injects creosote in an oily vehicle, and has devised an ingenious syringe for this purpose which I have the pleasure of handing you for inspection. The reaction after submucous injections is generally very slight, but they are not altogether free from unpleasant sequelæ, which I experienced in a far-advanced case. The patient was sent to me for treatment of his laryngeal tuberculosis, but the infiltration of the arytænoid region was so extensive that I did not venture to employ curettement. I injected a few drops of lactic acid into the right arytænoid, hoping that when the slough had come off the decreased swelling would allow curettement later on. But the injection had the opposite effect: the tumefaction grew considerably larger, and finally I had to resort to curettement, which, after having been performed a second time, relieved the distressing symptoms of the patient.

I have no personal experience in regard to electrolysis. It has already been mentioned in the text that it is adapted for hard infiltration, especially of the ventricular bands, the excision of which is liable to give rise to hæmorrhages. Although electrolysis is followed by destruction and absorption of the diseased tissue, it has not many adherents on account of the difficulty of manipulation and the length of treatment necessary to accomplish the desired result. Kafemann's and Heryng's instruments can be recommended for this method of operating.

Galvano-cautery, which is advocated by some authors, has still fewer followers at the present day, being superseded by the curettement, which is a more thorough proceeding, quicker in its effect, and less liable to unpleasant reactions.

Of extralaryngeal measures tracheotomy, which was performed for tubercular laryngitis as early as 1834, can not be passed without some remarks. It has been as warmly recommended by some as it has been strongly condemned by others. It can not be denied that quite a number of cases have been reported, especially by Moritz Schmidt, in which not only the urgent symptoms of stenosis have been relieved, but also considerable amelioration of the laryngeal disease has followed the operation, the patients having lived in comparative comfort for a number of years afterward. Therefore, tracheotomy will always retain a prominent place in the surgical treatment of laryngeal tuberculosis, as it is the paramount duty of the physician, if he can not cure, to give at least relief to the patient intrusted to his care.

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Extirpation of the Larynx.

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LUXATIO ERECTA OF THE SHOULDER JOINT.

By ALBERT M. JUDD, M. D.,
BROOKLYN.

On account of the rarity of cases similar to the following, I report it in full:

Frank M., aged thirty-two years, a well-developed, muscular subject, on April 28, 1895, fell upon the floor in his office. As he fell he grasped with his outstretched left hand the margin of his desk; thus the arm was abducted, rotated inward, and at the same time carried slightly backward. When first seen the patient was sitting up in his office chair with his left arm upright, the forearm pronated and resting across the back of the head, just below the occiput. The first request of the patient was that I should not attempt to put the arm down by his side, as one of his associates had already attempted that with terrible pain as the result. It was a typical case of luxatio erecta, the head of the humerus lying in the axilla just below the glenoid fossa. Reduction was effected without an anæsthetic by traction upward by my assistant in the direction assumed by the arm, while I followed and guided the head by direct pressure from below. The arm was placed at the side with the forearm across the chest, and sustained in this position with a Velpeau bandage for three weeks before any attempt was made to move the joint. Then rotation and slight abduction were begun. No attempt was made to move the arm beyond an angle of thirty degrees from the side until the fourth week. By the sixth week the patient had recovered the entire use of the joint, all the movements being perfect. Only nine cases of this variety of dislocation are spoken of in Professor Stimson's *Treatise on Dislocations.*

The Medical Society of the State of New York.—The following-named gentlemen constitute the business committee for the next meeting of the society, to be held in Albany during the last week in January: Dr. H. R. Hopkins, of Buffalo, chairman; Dr. Nathan Jacobson, of Syracuse; and Dr. J. M. Winfield, of Brooklyn. Members who wish to present papers are requested to notify the chairman of this committee promptly. Addresses have been promised by Dr. William Pepper, of Philadelphia, Dr. James H. Etheridge, of Chicago, and President Eliot, of Harvard University, who will speak on the subject of Medical Education of the Future.

The Seventh Regiment, N. G. S. N. Y.—It is announced that Dr. William A. Valentine, of the medical staff of the regiment, has resigned after having served as a medical officer for nearly ten years. By Dr. Valentine's resignation the regiment loses a most excellent officer.

The Index Medicus.—The work of getting subscriptions is going on very satisfactorily. We regret that we have not space this week to publish a letter from Dr. John B. Roberts, of Philadelphia, telling how it is being done in that city.

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THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

In the *Journal* for September 21st we published an article on Tuberculosis of the Upper Air-Passages, by Dr. Jonathan Wright, of Brooklyn. In the form of a paper read at the last annual meeting of the American Laryngological Association, Dr. Wright's was one of a notable series of papers on tuberculosis presented at the same meeting. The others, by Dr. Rice and Dr. Gleitsmann, together with an abstract of the discussion which followed their reading, are given in the present issue, much of the space in which is devoted to them in order that our readers may find a compact presentment of these important contributions. They are fair examples, we think, of the material that is brought before the association at its annual meetings—material that, we are glad to be able to say, is not exceeded in value by what is brought out at the meetings of any medical society in existence. The American Laryngological Association has done exceedingly good work during the seventeen years of its career, and it is not to the disparagement of what the other national organizations have achieved that we remark upon the fact. It is made up of men of great attainments, and its affairs have been well administered. The same may be said of a number of our American societies dealing with the specialties in medicine; they have done and are continuing to do work of the utmost advantage to the progress of medicine in general, and the profession may look to them in confidence to keep on in their several courses of investigation and discussion.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 15, 1895:

DISEASES.	Week ending Oct. 8.		Week ending Oct. 15.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	34	9	36	7
Scarlet fever	30	2	39	0
Cerebro-spinal meningitis	2	2	2	2
Measles	34	3	43	2
Diphtheria	148	29	139	19
Small-pox	0	0	0	1
Tuberculosis	140	118	68	102

The Vermont State Medical Society held its eighty-second annual meeting in Burlington on Thursday and Friday, the 10th and 11th inst., under the presidency of Dr. Joel H. Linsley, who read an address entitled Some Suggestions concerning the Examination of Blood.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Seventeenth Annual Congress, held at Rochester, N. Y., Monday, Tuesday, and Wednesday, June 17, 18, and 19, 1895.

The President, Dr. John O. Roe, of Rochester, in the Chair.

(*Concluded from page 472.*)

Tuberculosis of the Upper Air-passages; Ætiology.—A paper on this subject was read by Dr. Johnathan Wright, of Brooklyn. (See page 363.)

The Diagnosis of Tuberculosis of the Upper Air-passages.—Dr. Clarence C. Rice, of New York, read a paper on this subject. (See page 490.)

The Surgical Treatment of Laryngeal Tuberculosis.—Dr. J. W. Gleitsmann, of New York, read a paper on this subject. (See page 495.)

Medical Treatment of Laryngeal Tuberculosis.—Dr. E. L. Shurly, of Detroit, said that he thought the ætiology had been very correctly presented by Dr. Wright. It was necessary to have a correct view of the ætiology in order to properly consider the treatment. He had himself attempted to produce artificial tuberculosis in the pharynx of monkeys by scarifying the pharynx and applying tubercular cultures. In no instance had he succeeded in producing pharyngeal tuberculosis in these animals. Dr. Wright had brought out the fact that if the disease were due to the tubercle bacillus alone, every case, instead of twenty-five per cent. of the cases, should show laryngeal implication, for it seemed almost impossible that every human being afflicted should not have some abrasion or injury of the mucous membrane somewhere about the mouth or throat. It was therefore evident that there were certain antidotal properties in the secretions about the nose and throat which prevented the invasion of the system by tuberculosis bacilli, or that they alone were impotent to grow in such places.

He believed that there might be a phthisis without a tuberculosis, and also that the fibrous deposits and calcareous degenerations found post mortem did not necessarily indicate tuberculosis, but might be the result of an ordinary broncho-pneumonia that had occurred in childhood. This statement was not made on pure theory, for in two unmistakable instances he had known it to be demonstrated. The two individuals in question he had attended in childhood for severe broncho-pneumonia. One of them had subsequently been killed on a railroad, and the other had died of delirium tremens. A post-mortem examination had been held in each case, and each one had presented all the post-mortem appearances commonly belonging to tuberculosis. Was it possible that he had so erred in his original diagnosis as to confound broncho-pneumonia and tuberculosis?

The speaker said that, as it would be impossible to touch upon all of the agents now used for this disease, he would mention only certain ones. Thus, for local treatment, ice, iodoform, aristol, dermatol, tannic acid, formate of sodium, creosote, creolin, carbolic acid, lactic acid, boric acid and borax, chloracetic acid, chromic acid, chloride of zinc, sulphate of zinc, bichloride of mercury, iodine, chlorine gas and chlorine water, bromine, peroxide of hydrogen, permanganate of potassium, oil of eucalyptus, oil of turpentine, thymol, naphthaline, oil of rosemary, petroleum, lead acetate, the essential oils generally, ethyl bromide, hydrochloride of cocaine, morphine, chloroform, and ether had all been recommended; for the general treatment—iodine, chloride of gold and sodium, creosote, arsenic, strychnine, guaiac, phosphorus, albumin, oil of cloves, oil of turpentine, belladonna, sodium iodide, sodium chloride, cod-liver oil, alcohol, extract of malt, meat extracts, and gavage. For external applications there had been advised capsicum, blisters, croton oil, thapsia, and hot and cold applications. The forms of local treatment might consist of sprays, insufflations, inhalations, and the use of pigments.

If we had a case of laryngeal phthisis in the third stage, with perhaps only slight swelling and functional derangement, it might be better to confine ourselves to the selection of suitable climate and not to resort to any local treatment. By suitable climate he meant one with but few changes and as free as possible from dust. The question of resting the voice varied so in individual cases that this could only be determined in each case by experiment. When the process had extended further and there were solutions of continuity and much pain, there were demanded some measures which would relieve the patient's sufferings. We ought also to endeavor to check the local process, if possible, by the use of antiseptic sprays or gases. In his own practice he had accomplished a good deal by the use of chlorine gas and iodoform. Occasionally he had seen benefit follow blistering of the outside.

The general treatment might be considered as tonic, dietetic, specific, or climatic. Almost all specific methods were disappointing. He had tried all sorts of such methods, and had found iodine the best remedy, though painful. For diminishing the pain incident to the hypodermic injection of iodine, he had tried in vain different solvents. If patients could be persuaded to continue the treatment long enough the results would be almost uniformly good. He had also had good results from the use of creosote and the administration of oil of cloves and cassia, as suggested to him by Dr. Ingals. The oil was usually given at first in doses of from two to five drops. There were individuals who could take large doses of creosote easily, whereas others could not tolerate it in any dose. Gavage could not be used, as a rule, in private practice, but he had found that in hospital practice it often reduced the temperature and improved the general condition very promptly. In giving concentrated nourishment we were apt to rely too much upon animal food. He generally added some bread, tapioca, sago, or other vegetable preparation to the animal broth or extract. This treatment prevented the terrible gastric catarrh and anorexia which were often a source of so much annoyance to these patients, as well as furnishing them with nourishment. It was almost impossible in laryngeal phthisis to employ alcohol very freely, on account of the pain caused by swallowing it. In the later stages of laryngeal phthisis, where the patient could not breathe or swallow without excruciating agony, what were we to do? First of all, as a psychic measure, we should not take from the patient the benefits of hope. We should use a little sodium formate, with eucalyptol as spray, and perhaps cocaine freely to relieve the pain. He had never seen any benefit from tracheotomy in laryngeal phthisis, and he felt sure that in the four cases in which he had resorted to it he had really added to the patient's sufferings. He had used scarification and curetting in a few cases, but without observing any benefit from such means.

Dr. T. Morris Murray, of Washington, D. C., said that he had had some experience in the treatment of tuberculosis of the upper air-passages by surgical procedure. At the meeting of the Laryngological Section of the Pan-American Congress he had reported seven or eight cases so treated. In three of them the patient had suffered from laryngeal and pharyngeal ulceration. One of these had been curetted about two weeks prior to death from exhaustion. The wounds had healed and the patient had experienced decided relief. He thought that in some cases better results could be obtained by the surgical treatment of tuberculosis in the upper air-passages than by any other method with which he was familiar. One of the patients referred to was still alive and well five years after the treatment. He had had pharyngeal, laryngeal, and pulmonary tuberculosis. The ulcerations in the pharynx had healed after two operations. There had been several operations on the larynx and about a dozen applications of lactic acid.

Dr. **Ingals** said that he had been much interested in the report made by Dr. Murray some years ago, and just referred to; still he believed that if we treated a thousand cases of laryngeal and pharyngeal tuberculosis by this method and the same number by gentler procedures, it would be found that the larger number of recoveries would be among those treated by non-surgical methods. This statement, of course, he could not prove. He had seen several patients with laryngeal and pharyngeal tuberculosis recover under simple applications, such as those of lactic acid or iodine, without any scraping. He thought recovery was just as prompt as where scraping was resorted to. In his opinion, the cutting away of much tissue was of doubtful propriety in the great majority of cases. Now and then a successful case would be reported, but we heard very little of those that were unsuccessful. As to the statement of slight discomfort experienced by these patients, it reminded him of an eminent surgeon of his acquaintance who frequently gave his patients a half-glass of whisky, but no anæsthetics, and operated while they were, as he expresses it, "in a condition of talking anæsthesia." The surgeon felt no pain. One could quite anæsthetize the larynx with cocaine, but it was not the operation itself that caused most of the suffering, but the pain following it after the anæsthesia had passed off. He believed it was usually better to make these poor people as comfortable as was possible by the use of simple measures than to resort to scraping. For the last two years he had used as a spray in tubercular laryngitis the terchloride of iodine, in the strength of from one to three grains to the ounce, with excellent results. He did not like cocaine as a frequent anodyne, because its after-effect on the nervous system was bad. He still used with much satisfaction an application of carbolic acid, tannic acid, and morphine in glycerin and water. It had seemed to him to give much more relief than any other mixture he had employed. It caused only momentary smarting, and the patient could often swallow with comfort for many hours after the application.

Within the last few years he had sometimes asked himself the question, Are you becoming fossilized? When thoroughly competent younger men made the statement that the bacillus of Koch was not the only cause of tuberculosis, he felt that even though he was an old fossil he was still in excellent company. He had long held and expressed the opinion that we all harbored large numbers of tubercle bacilli, but that unless the general health was at fault there was but little danger of our contracting consumption. He felt that the profession within the next few years would come to accept this view, now so vigorously opposed by the young and enthusiastic bacteriologists.

Dr. **Daly** said that he had seen a number of patients with laryngeal phthisis recover. One of them, treated some twelve years ago, had recovered sufficiently to contest his just bill for professional services. That patient had been treated with generous diet and terebinthinate inhalations, but he believed that the cure had been chiefly due to the very liberal local use of iodoform by insufflation. He had in mind another patient, a railroad agent, who had recovered under the use of iodoform and iodine pushed to the point of toleration. He had remained well seven or eight years, and had finally been killed in a railroad accident. This man had recovered in spite of alcoholism and other dissolute habits.

The speaker said that he had never resorted to the use of the curette, although he had been interested in the able contribution on this subject by Dr. Gleitsmann. He had never felt that his patients would be benefited by it. In his consumptive wards at the Western Pennsylvania Hospital, in Pittsburgh, he had often been pained at the thought of how comparatively fruitless for therapeutic practical value had been the scientific studies of Koch on the tubercle bacillus. He did not believe those studies had ever shortened the downward course of a consumptive patient; although, undoubtedly, they might have benefited preventive medicine, they had, from public indifference, done so only to a very small degree. He trusted for a better future for them in this direction. He was strongly of the opinion, however regretfully, that from the point of view of the therapeutist Koch's brilliant studies had been of no practical value. While his statistics during the last few years had been somewhat better than formerly, he attributed this improvement chiefly to the systematic and persistent administration of creosote to every patient who had been able to tolerate this drug. Some patients could not at first tolerate it, but by careful watching and gradations of the dose most individuals could be made to take it with advantage. He had some patients now taking with benefit as much as thirty drops three times a day as a result of this process of careful administration.

Dr. W. K. **Simpson** said that it seemed singular to him that so many physicians denied the causative relation between tuberculosis and the tubercle bacillus, while at the same time their whole treatment was directed toward the destruction of the bacilli, as instanced by the administration of creosote, iodoform, and like remedies.

Dr. **Jonathan Wright** said that he, with those who had opened the discussion, had taken a fortified place, and were placed on the defensive. He felt that the remarks of Dr. Daly were deplorable. Simply to state the fact that we had not gained anything in therapeutics from the discovery of the tubercle bacillus by Koch was about as good an argument as to say that we had gained nothing from the use of the microscope in the first few years following its introduction. In time, the discovery of the bacillus of Koch would be looked upon as the beginning of the fight. He wished to express his entire and thorough skepticism as to all forms of treatment of tuberculosis of the larynx. He had tried almost every method that had been recommended. He had used curettement certainly as early as Dr. Gleitsmann, but he had seen so few cases in which it had given any benefit that he had concluded that the results did not warrant the inconvenience and discomfort attendant upon the treatment. We had not yet begun to profit by new discoveries which had been made; nevertheless he felt that these discoveries would be the beginning of our advance in the therapeutics of tuberculosis. Medical men of all ages had been too much disposed to look for some one cause for a given disease. While this desire for simplicity was commendable, it often led us on false scents. There were many cases of tuberculosis, especially in the later stages, which were not attended at all by symptoms referable to the condition of the larynx. A few patients would recover without any treatment, and occasionally one would recover in spite of treatment.

The vital objection to all treatment was that it was limited to the initial stage of the disease, and this stage of a disease was a very uncertain period. When we considered that over one half the patients recovered from tuberculosis in the initial stage, it was evident that good results would follow any treatment. The only methods he had not yet tried were the radical procedures of Krause and Heryng, but he proposed to try them. The vast majority of cases, even the advocates of this system admitted, were not suitable for this treatment.

Dr. Shurly said that he did not feel quite so pessimistic as Dr. Daly about the therapeutics of tuberculosis, and especially of the laryngeal variety. He felt that our records during the last few years showed a distinct advance in this respect. The treatment, however, must be begun sufficiently early, although not necessarily in the initial stage. He believed that meddlesome local treatment was mischievous. He relied chiefly on iodine and iodoform for the local treatment, and the formate of sodium as a detergent. It might be objected that powders would act as mechanical irritants, but, whether this was true or not, he had been pleased with the results obtained from the use of iodoform. He fully agreed with those who had expressed the opinion that the tubercle bacillus was not the only cause of tuberculosis. He had adhered to this opinion so long, and in the face of so much opposition, that he was particularly gratified to find others now coming forward and expressing the same view. Tuberculosis was the result of several complex retrograde vital processes. He felt that the therapy of this disease should be followed out on the lines already laid down, and that organic chemistry and biology, working hand in hand, would eventually aid us in solving this highly important and perplexing problem of rational ætiology and therapy. Until this time, our therapeutics could not be scientifically exact. The only difficulty that he had found with the tannic-acid and carbolic-acid mixture mentioned by Dr. Ingals had been to procure a weak and stable solution. About fifteen years ago, Gilbert, of Paris, had used tannic acid very extensively as a specific for tuberculosis, both locally and internally. He had reported many successful cases. Personally Dr. Shurly had been disappointed with creosote as an internal remedy, although he valued it as an effectual local antiseptic. He had found it impossible to continue the administration of creosote for any length of time in such large doses as were recommended by many practitioners. He had used the oil of cloves as a substitute for the creosote, and when given with a suitable vehicle, like extract of malt, it could be taken in large doses. It did not produce the bad after-effects of creosote, and the systemic effects appeared to be fully as good. We should always remember that in therapy the physiological action must be taken with a grain of allowance, for it must vary greatly in different individuals. For instance, he knew of a man who could only take two or three hypodermic injections of iodine without exhibiting the effect of the iodine, whereas a sister in the same family, suffering from phthisis, could take injections of half a grain for weeks at a time without showing the physiological action of the iodine.

He had not used curettement, for he could rarely find a case in which the disease appeared to be sufficiently localized to warrant him in expecting benefit from this treatment.

The question of the prevention of tuberculosis was now attracting the most earnest attention of the medical profession. The question was, Were we, as a body, willing to indorse the extreme views now held by many eminent sanitarians? Until the sanitarians could show us how many cases of tuberculosis were without doubt due to communication, they had no right to ask us to indorse their theories.

Dr. Gleitsmann said he had to thank the society for its lenient criticism. It had been well known for years that laryngeal as well as pulmonary tuberculosis was occasionally cured spontaneously. It was also known that cures had followed the use of the most varied remedies. Surgical treatment was one of the means of curing some cases of laryngeal tuberculosis. As he had said in his paper, the number of cases suitable for this treatment was quite limited, although perhaps not so limited as Dr. Wright seemed to think. He had narrowed the limits, and had endeavored to avoid being too enthusiastic. What cases were suitable for this treatment he had already described in his paper. He was sorry that Dr. Ingals's remarks could not be refuted by figures. It would be very hard for even a man of vast experience to pick out a thousand cases suitable for curetting. It was also extremely difficult to get data even from old and well-established health resorts in the Old World. In laryngeal tuberculosis we had no figures showing the percentage of cures by any method of treatment. He had understood Dr. Ingals to say that he had seen good results from lactic acid. This was a medicinal rather than a surgical treatment. Where there was a tuberculous tumor which had not broken down, lactic acid was of no avail unless injected into the mass; it was only of service in cases of open ulceration. In conclusion, he would state that the treatment had been extensively employed by Heryng, and also in France and England. If it was employed in properly selected cases, the result would be excellent, as had been described by Dr. Murray and himself.

Book Notices.

System of Surgery. Edited by Frederic S. Dennis, M. D., Professor of the Principles and Practice of Surgery, Bellevue Hospital Medical College, etc. Assisted by John S. Billings, M. D., LL. D., Edin. and Harv.; D. C. L. Oxon.; Deputy Surgeon General, U. S. A. Vol. II. Minor, Plastic, and Military Surgery—Diseases of the Bones—Orthopædic Surgery—Aneurysm—Surgery of the Arteries, Veins, and Lymphatics—Diseases and Injuries of the Head—Surgery of the Spine—Surgery of the Nerves. Profusely Illustrated. Philadelphia: Lea Brothers & Co., 1895. Pp. 8 to 926.

The second volume of this great work has followed the first with commendable promptness. The contributors to this, as to the first volume, are men of high professional attainments, and their names will inspire confidence in the work as a whole. This volume opens with a chapter on Minor Surgery, by Dr. H. R. Wharton, whose long experience as demonstrator in this line in the University of Pennsylvania makes him an authority upon this subject. He has given a careful *résumé* of the methods and appliances used in minor operations.

The section on Bandaging and Surgical Dressings is replete with useful suggestions and is copiously illustrated, but those upon Electro-therapeutics and Instrumentation of the Bladder are rather too brief and incomplete to be of much practical value.

The chapter on Plastic Surgery, by Dr. George R. Fowler, is devoted to operations on the face, hands, and feet, and for bone-grafting. So far as it goes, it is well written, accurate, and fully illustrated, but there are other plastic operations that should have been described in a work of this character—*e. g.*, those upon the urethra, upon the bladder, upon the rectum, and for extensive wounds and burns upon the trunk and extremities, but perhaps these will be treated of in the volumes yet to come.

Following this are some chapters on Military Surgery, by Lieutenant-Colonel Forwood; Diseases of the Bones, by Dr. Nicholas Senn; and Orthopædic Surgery, by Dr. Virgil P. Gibney. The first of these will particularly interest army and navy surgeons and be of service to those about to undergo examinations for appointment to the medical corps of the army. Dr. Senn's contribution maintains his reputation as a scientific investigator and original thinker.

Of the chapter by Dr. Gibney, it is but just to say that it is almost a treatise in itself. The progress made in this department of surgery is daily exemplified by the decreasing number of deformed persons that we see on the streets, and what has been done is only an earnest of the future in this branch of our profession, for it encourages parents to have these unfortunate sufferers treated early in life, while the parts are flexible and when their deformities can be overcome. With the aid of this article of Dr. Gibney's the general practitioner should be able to diagnosticate and properly advise about, if not treat, any case of this character, and the number of permanent cripples in our community should steadily grow less.

The remainder of this volume is composed of chapters on Aneurysm, by Dr. Lewis A. Stimson; on The Surgery of the Arteries and Veins, by Dr. Dennis; on The Lymphatic System, by Dr. Gerrish; on Diseases and Injuries of the Head, by Dr. Roswell Park; on The Surgery of the Spine, by Dr. Keen; and on The Surgery of the Nerves, by Dr. Roberts.

Dr. Park's article deserves special mention. We scarcely imagined the number of "diseases and injuries" our cranium was subject to until we had read this chapter. It is a complete and interesting contribution and well worthy of its noted author. We have learned much from it and have no doubt that our readers will do so as well. The names of the other contributors speak for themselves, and the subscribers to the work will not be disappointed in this volume.

The Lumleian Lectures on Certain Points in the Ætiology of Disease, delivered before the Royal College of Physicians, 1892. To which is added the Harveian Oration, delivered before the College in 1893, with a Biographical Notice of Harvey and an Appendix of Statistical Tables. By P. H. Pye-Smith, M. D., F. R. S., Fellow of the College and Senior Physician to Guy's Hospital. London: J. & A. Churchill, 1895. Pp. 236. [Price, 7*s.* 6*d.*]

The class of medical literature to which this volume belongs is one relatively uncommon in the United States, for here there flourish the text-book, the handbook, and the "system," to the practical exclusion of the more learned if less instructive medical essay. Endowed lectureships, indeed, are not entirely wanting in this country, but their holders, as a rule, incline far more to scientific progress and the results of research than to the classic utterances of the English emeritus. The number of these productions to which medical England listens each year is really remarkable, and lectures, orations, dissertations, and "opening addresses" crowd the columns of their journals to take form subsequently in books. These productions almost invariably have merit, but rather as literary productions than as scientific teachings. They are full of generalities and rhetorical effect, they teem with classic quotations, and if the quotations are from the Latin and the Greek so much the better; they are the sort of production which might be expected from the well-read and middle-aged English man of science, for education has no more perfect example than he, but in the German sense and in ths American they are seldom progressive. Of such productions the work under consideration is an admirable example. The lectures on ætiology are most readable medical essays, which, if of little originality, are none the less delightful as compositions.

Of overwork and the strain of modern life as causes of disease the author is incredulous, and, though our own impression of the matter is rather a skepticism than an incredulity, we are fully convinced that these factors are too often employed as excuses for ailments which, as the author hints, are far more likely to be due to gluttony, and are almost ready to agree with him when he ungrammatically says "there is no fear of any one of us using our brains too much for our health; nor do I believe that any amount of mental labor or business or honest work of any kind interferes with health or shortens life a day." The opinion that gastric ulcer is the particular scourge of women has latterly seemed to many observers exaggerated if not erroneous, and Pye-Smith emphasizes the error by calling attention to the preponderance of cases of this disease in males, as shown by autopsy.

Of the Harveian oration and the memoir of the life and works of Harvey little need be said save that they are literary productions of great merit. Their style, it is true, is somewhat discursive, but this is the usual fault of biography. Altogether the volume is one from which much benefit may be derived. It certainly is not "invaluable for the busy practitioner," but it is adapted to him to whom medicine is not a trade but merely a part of a broader and a higher education, and by him it will be appreciated.

Text-book of Operative Surgery. By Dr. Theodor Kocher, Professor of Surgery and Director of the Surgical Clinic in the University of Bern. Translated with the Special Authority of the Author from the Second Revised and Enlarged German Edition, by Harold J. Stiles, M. B., F. R. C. S. Edin., Senior Demonstrator of Surgery and formerly Demonstrator of Anatomy in the University of Edinburgh, etc. With One Hundred and Eighty-five Illustrations. London: Adam and Charles Black, 1895. Pp. xviii–303. [Price, $3.50.]

We have already reviewed the subject matter of this work in our notes of the American edition, so that there is nothing more for us to say unless we reiterate the high opinion expressed at that time. The work is not so encyclopædic as that of Treves, but it treats of about all the important and practical operations in general surgery.

The descriptions are brief, but lucid, and little space is wasted on bibliography, although due credit is generally given to the originators of the operations described.

A Manual of the Modern Theory of Surgical Asepsis. By Carl Beck, M. D., Visiting Surgeon to St. Mark's Hospital, etc. With Sixty-five Illustrations in the Text, and Twelve Full-page Plates. Philadelphia: W. B. Saunders, 1895. Pp. 6 to 306. [Price, $1.25.] [*Saunders's New Aid Series.*]

This little work, dedicated to the memory of von Langenbeck, is really a description of asepsis as it is applied by the author in St. Mark's Hospital. A very brief account of surgical bacteriology serves as a foundation upon which to treat of asepsis and antisepsis. The remainder of the work is devoted to a detailed description of aseptic operations. While such minutiæ may be tiresome to those who by constant hospital work are unconsciously drilled in the work, to the student, to the general practitioner, and to the professional nurse, who have to carry out the measures either for themselves or for the operator, they are of the utmost importance and greatest help. It is very well to say in journals and general works on surgery, "the operation is done with all aseptic or antiseptic precautions," but this will mean very little unless these precautions are carefully described. It is the small points in which the lapses of asepsis are made, and the author has done well to insist upon them.

The work can not be called original, but it is a practical and useful description of a carefully considered system of surgical asepsis.

BOOKS, ETC., RECEIVED.

A Text-book of Physiology. By M. Foster, M. A., M. D., LL. D., F. R. S., Professor of Physiology in the University of Cambridge, etc. Sixth American Edition. Thoroughly revised, with Notes, Additions, and Two Hundred and Fifty-seven Illustrations. Philadelphia: Lea Brothers & Co., 1895. Pp. 10 to 929.

Cutaneous Medicine. A Systematic Treatise on the Diseases of the Skin. By Louis Duhring, M. D., Professor of Diseases of the Skin in the University of Pennsylvania, etc. Part I. Anatomy of the Skin—Physiology of the Skin—General Symptomatology—General Ætiology—General Pathology—General Diagnosis—General Treatment—General Prognosis. Illustrated. Philadelphia: J. B. Lippincott Company, 1895. Pp. vii–221.

A Plea for a Simpler Life. By George S. Keith, M. D., F. R. C. P. E. London: Adam and Charles Black, 1895. Pp. viii–149. [Price, $1.]

Transactions of the Association of American Physicians. Tenth Session, held in Washington, May 30 and 31, 1895. Volume X.

The Osteopathic Fad. By A. J. Steele, M. D., of St. Louis. Read before the Missouri State Medical Association, May 21, 1895.

Two Cases of Disease of the Falloppian Tubes with Complications, and Notes on Diagnosis. By Albert H. Tuttle, M. D., of Cambridge, Mass. [Reprinted from the *Annals of Gynæcology and Pædiatry.*]

Total Hysterectomy by a New Vagino-abdominal Method. By Albert H. Tuttle, M. D. [Reprinted from the *Annals of Gynæcology and Pædiatry.*]

Inflammation of the Middle Ear, with Involvement of the Mastoid. Report of Cases. By W. C. Bane, M. D., of Denver. [Reprinted from the *Denver Medical Times.*]

Miscellany.

Urotropine.—Dr. Arthur Nicolaier, of Göttingen, has given this name to hexamethylenetetramine because he has observed various changes in the urine under its use. In the *Deutsche medicinische Wochenschrift* for August 22d there is an article by him on the therapeutical use of urotropine. He says that under the influence of the remedy diuresis is increased; that uric acid and sedimentary urates, previously present in large quantities, no longer appear; and that the disappearance of these deposits is not a mere consequence of the increased diuresis, but is due to the direct action of the remedy on the uric acid and its salts. These experimental results, he thinks, have demonstrated that urotropine may be employed not only as a diuretic, but in the treatment of the uric-acid diathesis and the various diseases dependent upon it.

His further experiments show that the remedy is especially adapted to the treatment of uric-acid calculi, for after the ingestion of urotropine the urine, without any change occurring in its acid reaction, gains certain properties that make it a uric-acid solvent. Thus, if an adult whose urine does not dissolve uric-acid concretions even after several days' retention in the culture oven is given sufficiently large doses of the drug, we find that within twenty-four hours the urine begins to dissolve such calculi placed in it, and kept at a temperature of 98·6° F., and that this goes on until after several days only the organic albuminous framework of the stone is left. The urine loses its uric-acid solvent properties as soon as the urotropine is all excreted. Even after the use of small doses of urotropine the urine gives an orange-yellow precipitate with bromine water, just as a watery urotropine solution does. This precipitate is dibromide of urotropine. The drug is therefore excreted in the urine; and it passes into it very quickly, being demonstrable in a quarter of an hour after its ingestion. The urine shows the reaction for some time after the use of the remedy is discontinued, the length of time during which this occurs depending upon the size of the last dose. After a single dose of seven grains and a half the presence of urotropine can be demonstrated for about thirteen hours; after a dose of fifteen grains it is demonstrable for twenty-seven hours.

One case out of many is related as follows: A healthy man was given three times in one day fifteen grains of urotropine dissolved in water. The daily amount of urine before the administration of the drug was thirty-four fluid ounces, the specific gravity was 1·021, the reaction was acid; on allowing it to stand, there was a moderate deposit of uric-acid crystals. Uric-acid concrements varying in size from that of a poppy seed to that of a hemp seed were allowed to lie in seven drachms of this urine for five days at a temperature of 98·6° F., and were entirely unchanged. On the fifth day the urine showed a slight turbidity; its reaction was yet acid. After the use of the forty-five grains of urotropine the daily amount of the urine increased to forty-six fluid ounces, its specific gravity was 1·020, its reaction was strongly acid, and no uric-acid crystals appeared even when it was allowed to stand for a long period of time. In seven drachms of this urine kept at the temperature of the culture oven, the solution of the uric-acid concrements of the sizes mentioned had begun in twenty-four hours; after five days only the organic framework of the smaller ones was left, while in the larger ones there was only a small amount of inorganic matter remaining in the centre. The urine remained clear during all this time, and its marked acid reaction was not changed. When the urotropine had all been excreted from the body, and the urine gave no reaction with bromine water, the latter ceased to show any solvent properties toward uric acid. The solution of uric-acid concrements was not in any way due to the increased diuresis that set in after taking the drug. Before giving the urotropine the author increased the collected daily amount of urine to forty-six fluid ounces with distilled water, and found that uric-acid stones could lie in it for five days at a temperature of 98·6° F. without undergoing any change at all.

Further researches with the new drug have shown that the increased diuresis may be absent in certain cases. They have also shown that, while doses of one hundred and twenty and even one hundred and fifty grains may be borne by adults, yet in certain cases, for some unknown reason, the continued use for lengthy periods of time of daily doses amounting to only ninety grains occasionally causes unpleasant symptoms which call for a decrease in the size of the dose. Several patients that had taken urotropine in large doses for a time began to complain of a sensation of burning in the vesical region, generally after urinating; these pains radiated along the urethra, and were sometimes accompanied with an increased desire to micturate. The urinary examination in these cases showed only a moderate amount of transitional epithelium, and no other abnormal constituents. If in spite of these symptoms the use of the remedy was persisted in in the same doses, the trouble increased in severity, and occasionally red blood-corpuscles appeared in the sediment. All these troubles disappeared, however, as soon as the dose of urotropine was diminished or its use was discontinued entirely, and the urine soon returned to its normal state. From daily doses of less than thirty grains the author has never seen any ill effects, no matter how long they were continued. Occasionally, however, he has found small quantities of transitional epithelium in the sediment even then.

He has, therefore, latterly limited himself to giving doses amounting only to from fifteen to twenty-two grains daily, that amount being taken at once, in the morning, dissolved in water. The solution of the uric-acid concrements frequently did not begin until they had lain two or three days in the urine, but it went on steadily after that. Even daily doses of fifteen grains caused the urine to show uric-acid solvent properties in the culture oven. Similar small doses were frequently diuretic in their action also. The experiments made on patients suffering from uric-acid calculi with these doses have given so far very satisfactory results. The author has not been able to note any deleterious influence on the kidneys even when larger doses were employed. Indeed, some patients that had albuminuria with casts and red blood-corpuscles in the urinary sediment before the urotropine was administered showed a diminution in the quantity of the albumin and the morphotic elements while under the influence of the drug. Here the author remarks that therapeutic experiments with urotropine had before been made by Bardet, but they were confined to two cases of *rhumatisme goutteux.* Bardet, says Nicolaier, says nothing of the size of the doses employed or of the length of time that the experiments occupied; and he is not for the present in a position to draw any conclusions from these two cases. He only mentions urotropine very briefly, saying that in the test tube it readily dissolves urates and uric-acid concretions, and that it is well borne by animals in very large doses. Bardet does not mention the facts that in the human being it is excreted in the urine, and that it imparts to that fluid uric-acid solvent properties.

While he was experimenting on these properties of the urine in the culture oven, after the ingestion of urotropine, the author's attention was drawn to another property of the fluid. He noticed that the urine of patients that were taking from forty-five to ninety grains of urotropine remained clear and retained its acid reaction at a temperature of 98·6° F., even when a few drops of urine in a state of ammoniacal fermentation were added to it. Several specimens of such urine he has kept for nine months in the oven, without ammoniacal decomposition setting in. Even after inoculation with pure cultures of the *Bacterium coli commune* these urines remained sterile at 98·6° F. The same thing happened with urines that were the result of daily doses of fifteen grains and frequently with those of seven and a half grains daily.

These observations, says the author, showed that the use of urotropine hindered the development of micro-organisms, such as the bacteria of the ammoniacal decomposition of the urine and the *Bacterium coli commune,* which latter, as is well known, is a factor in many of the bacterial diseases of the urinary passages. The results of his experiments in this direction show, in his opinion, that the drug ought to be employed in these morbid conditions. The author has used urotropine in two cases of cystitis in which the urine was strongly ammoniacal, and found it quickly efficacious.

The first case was that of a phthisical patient who had suffered, probably for years, from severe cystitis. The cloudy urine contained a moderate amount of albumin, was very alkaline in reaction, and smelled strongly of ammonia. The sediment was abundant and greenish yellow; it showed many bacteria and numerous crystals of triple phosphate and urate of ammonium. When the patient was put on the use of ninety grains of urotropine daily, a tablespoonful of a watery solution being given every two hours, some portions of the urine, even on the first day, were clear and acid. The total daily amount of urine, somewhat increased, was still alkaline; but it had lost its ammoniacal smell, and the sediment was much less in quantity. On the third day the total amount of urine reacted acid; it showed only a moderate cloudiness, which was found to be due to pus corpuscles in small quantity, transitional epithelium, and red blood cells. During this period the vesical pains, especially after urinating, which had previously been but slight, were somewhat increased, and they became still worse with the continuance of the same dose. The author thought of the possibility of this being due to the urotropine, and on the seventh day he stopped its use. On the very next day the urine became strongly ammoniacal again, the sediment increased, the triple phosphate and urate-of-ammonium crystals became more abundant, and the pains in the vesical region became somewhat less. The attempt was then made to prevent the ammoniacal decomposition of the urine in the bladder by means of smaller daily doses, those of from seven and a half to twenty-two grains. It was found that with doses of from fifteen to twenty-two grains each portion of urine, as it was voided, was acid, but the entire daily amount reacted alkaline; it did not, however, smell of ammonia, the formation of the triple phosphates was very much less, and the urate-of-ammonium crystals did not appear at all. Daily doses of seven grains and a half did not seem to be effective in this case. Pain was not present, or at most was transient, with these small doses. When the use of urotropine was stopped the patient was treated until his death mostly with sodium salicylate; but even in doses of seventy-five grains it had no effect at all. The post-mortem showed ulcerative urethritis, diphtheritic cystitis, pyelitis, and ureteritis.

The second case was that of a patient who had, among other symptoms that arose after an accident, paresis of the detrusor vesicæ, together with cystitis with ammoniacal decomposition of the urine. This occasioned him severe pain. Though this cystitis was treated at the Göttingen Medical Clinic with irrigation of the bladder with boric-acid solution, the patient's condition was not improved. His urine had to be drawn several times daily with the catheter; he was given large doses of salicylate of sodium, seventy-five grains daily, with pine-needle oil, but without result. His urine was strongly alkaline, smelled of ammonia, and contained a very abundant glutinous sediment. His bladder was washed out first with a one-per-cent. boric-acid solution and then with a one-per-cent. carbolic-acid solution, but it only gave him temporary relief. The urine for the twenty-four hours retained its ammoniacal odor, and only those portions voided after the washings of the bladder were faintly acid. A marked improvement set in, however, when the patient was put on a daily dose of twenty-two grains of urotropine, a tablespoonful of a watery solution being given every two hours. At once after the ingestion of the first tablespoonful the urine drawn off with the catheter was acid, and two days later the entire amount of the secretion was strongly acid. The sediment showed only a small quantity of pus corpuscles and transitional epithelium, and the pains in the vesical region had almost entirely disappeared. That the change in the reaction of the urine and the very considerable mitigation of the pain were due to the action of the urotropine was demonstrated, says the author, by the fact that when the patient received only ninety grains of sodium salicylate daily the urine resumed its alkaline reaction and its ammoniacal odor, and the pains increased again. In fact, the pains were so bad that the patient begged to be put under his former treatment again. The author granted his wish and again convinced himself of the beneficial effect of daily doses of twenty-two grains. This improvement continued even when he was only taking fifteen and seven and a half grains of urotropine daily. These doses caused the pus corpuscles to disappear from the urine. When the use of the remedy was discontinued, the ammoniacal smell and the vesical pains returned. Merck's bromaline, even in doses of seventy-five grains a day, had no favorable effect in this case. At the time of the report this patient was taking fifteen grains of urotropine daily. His urine was acid, and he had no pain. The paresis of the detrusor vesicæ continued.

These observations show, says Nicolaier, that urotropine hinders the ammoniacal decomposition of the urine, and that this effect may be obtained by giving daily doses of from seven and a half to twenty-two grains.

The author has used the remedy in vesical inflammations in which the urine was strongly acid, but the results have not been very evident, and he can not pass judgment on the efficacy of urotropine in affections of this nature.

Mercury in Heart Disease.—Dr. Murray, of London, contributes an article on this subject to the *Lancet* for September 28th in which he says that repeated observation has convinced him that mercury possesses a value far beyond the supposed alterative nature of its action—not that it fails to relieve congested vessels by drainage or osmosis, for doubtless, he says, this lays the foundation of its further action on the heart itself, and it would fail to relieve the heart did it not eliminate biliary and other effete matter from the blood and tissues of the liver and portal system, for instance; but when due allowance has been made for these primary effects there remains strong evidence that it tells upon the heart itself. Its special benefits are exercised in cases of dilated and hypertrophied heart. By means of it the thready, weak, rapid, and irregular pulse is made full, soft, regular, and slow, with manifest relief of such symptoms as dyspnœa, pectoral weight and tightness, and sensations of faintness. The *angina sine dolore* is often marvelously relieved and removed by two or three grains of blue pill three times a day, and the severe forms of angina pectoris not infrequently disappear under its influence. While the nitrites, nitroglycerin, etc., afford temporary relief, this remedy is much more permanent in its effects. It need hardly be said, says Dr. Murray, that to give digitalis a fair chance it is absolutely necessary to pave its way by preliminary doses of mercury and to foster its action by repeated doses. Many of the cases where digitalis, etc., fail, or seem to fail, by supposed accumulation depend on this: that we are giving the digitalis without the blue pill or calomel, and it often falls to the lot of the consultant to make a great hit by inserting the mercurial into the previous treatment. Much more true is this of iron and digitalis combined. We see a patient with engorged vessels and laboring heart taking iron and digitalis much to the detriment and not to the benefit of the case—each dose is but adding fuel to the fire—energizing the heart in its futile attempts to drive the blood through the engorged vascular system, and thus exhausting the organ in its hopeless struggle. All this is changed by frequently repeated doses of mercury; the portal system is drained, the water from the general vascular system is "exosmosed," dropsical accumulations are absorbed, and, by pushing the drug, we get hold of the heart itself and produce the slow, soft, regular, and effectual pulse, giving the digitalis or strophanthus a fair chance to come in as cardiac tonics; and at last we complete the circle by arriving at the point whence we departed with the patient in a very different condition, and we can give the iron and digitalis now with impunity—nay, with immense benefit. The following case, says the author, speaks for itself, and its quotation is the more apt as the patient came from being under the care of an eminent Edinburgh physician in the very condition just described—namely, that of a dilated and hypertrophied heart goaded to excess in a useless effort by iron and digitalis: The patient, a hard-working man, was a Scotchman, and had all the talent, physique, and energy peculiar to his race. He gradually manifested symptoms of valvular disease and dilated heart when about forty-eight years of age. He went to Edinburgh and was under treatment there for several weeks. At last he was sent home with the assurance that nothing more could be done for him. Dr. Wilson, of Wallsend, was summoned to see him, and he called Dr. Murray in consultation on the case. They found the patient in the following condition: He was propped up in bed. His countenance was anxious, his eyes seemed to protrude from their sockets, and his face was bathed in perspiration, with a livid color of the lips and skin. His breathing was shallow, frequent, and difficult, accompanied by a constant hacking and ineffectual cough. His pulse was hardly perceptible, irregular, and thready. The heart's action was tumultuous and irregular, the cardiac sounds were almost inaudible, and a distant murmur could be heard with both sounds at both the right and the left apex. No cardiac impulses could be felt except a wavy movement at the epigastrium. The liver was enlarged, and the abdominal cavity was distended with fluid, as were also the lower extremities and the scrotum. The pleural cavities were also occupied to a considerable extent by fluid effusion. They determined to abandon the usual cardiac stimulants and gave him two or three grains of blue pill three times a day, and at the end of two days he was given a smart purge of jalap. Greatly encouraged by the result, they pushed the blue pill (from two to three grains three times a day) for a week or more, and during that time a steady relief of all the symptoms ensued. The countenance became placid, the tongue (before dry and brown) became moist, and the pulse more regular, full, and soft; the dropsical accumulations gradually receded, and the breathing resumed a normal character. Now, says the author, was the time for digitalis—always best given on a falling tide in dropsy—and doubtless the patient owed much of his rapid recovery to the temporary and occasional use of that drug; but the principal treatment was by the steady use of blue pill, now gradually diminished to two pills a day, and finally to a five-grain pill at bedtime. To sum up the results, the man felt himself to be quite free from all his troubles in six weeks.

The point of interest in this case, says Dr. Murray, is that during the next ten years the patient took his blue pill every night with few intermissions, and declared that whenever he omitted to take it for a few nights his heart began to trouble him and his breathing became difficult. This nightly dose was in some mysterious way enabling a heart massive with disease to discharge its duties in such a way as to make its owner feel quite well. The drug never salivated, purged, or nauseated him, and it never gave his breath a touch of fœtor. At last, however, his old symptoms returned, the machinery was worn out, and he died chiefly from the pressure of abdominal fluid on his enormous heart.

At the post-mortem examination the heart was seen to be excessively enlarged, and the space occupied by it measured eight inches across and eight inches from above downward. The lungs were displaced backward and compressed by the enlarged heart. The right auricle was very much dilated, almost to the size of a man's fist. The walls were thickened and the muscular tissue hypertrophied. The auriculo-ventricular orifice was very much increased in size and readily admitted eight fingers at once. The tricuspid valves were much thickened and opaque. The right ventricle was much dilated and the walls were thin. The left auricle was much dilated, the walls were thick, and the endocardium was opaque. In one part of the wall of the auricle there were two bars of calcified muscular tissue united by a crossbar of the same substance. The auriculo-ventricular opening was much constricted and hardly admitted the tip of the index finger. The mitral valves were adherent, so that there was only a small opening like a buttonhole between them. The valves were thick and rigid, but not calcified. The left ventricle was dilated, but its capacity was only about half of that of the right ventricle. The walls were not much increased in thickness. The peritoneal cavity contained a considerable amount of clear fluid. The spleen showed a dense white patch of scar tissue a quarter of an inch deep in the centre—evidently the site of a very old infarction. The surface of the liver was nodular; on section it showed dense strands of connective tissue of advanced cirrhosis.

To rescue a man from the jaws of death, says Dr. Murray, and to give him ten or eleven years of fairly good health confers on any drug a reputation, and its potency is established. The question, he says, naturally arises, How does it act? Is it a cardiac tonic, stimulant, alterative, or what? Does it act on the secondary apparatus of the circulation and the blood itself by reducing the resistance of the vessels, diminishing the volume of blood, and altering its fibrinity so as to make it circulate more freely? Dr. Murray thinks that it does produce these effects, and, at the same time, that it soothes the heart by purifying the blood of effete accumulations.

Mental Symptoms occurring in Bodily Diseases.—At a recent meeting of the British Medical Association (*British Medical Journal*, September 28th) Dr. Ernest S. Reynolds, of London, read a paper on this subject in which he dealt only with the results of his personal experience during four years' residence in the Manchester Royal Infirmary and five years' work in the Manchester Workhouse Infirmary.

Mental depression, he says, is by far the commonest slight emotional state met with, and may be a natural feeling caused by pain or actual personal inconvenience, or it may be an entirely unnatural depression quite incommensurate with surrounding circumstances. It is found proverbially in abdominal diseases, excepting, curiously enough, in splenic disorders; for the old expression fits of the spleen for lowness of spirits and irritability of temper does not seem to be borne out by clinical observation. Contrary to the usual statements, mental depression and more or less hypochondriasis are very common in phthisis, especially as it is observed in the wards of a workhouse infirmary. Intense depression accompanies, and sometimes follows, various fevers, such as rheumatism and influenza. In the interparoxysmal periods of epilepsy depression and hypochondriasis are often marked features, and the after-effects of poisons, such as cannabis indica, opium, alcohol, and carbon bisulphide, are those of depression. Alcoholic paralysis is accompanied by great depression, especially in women, oftener by exaltation in men. Vague dragging abdominal pains and hypochondriasis in women should always lead us to examine for movable kidney. The presence of hair on the face in women causes great depression, which may lead on to true melancholia and even suicide.

Mental dullness (which must, of course, be distinguished from unconsciousness) is found in cerebral tumor, in intense headache, in phthisis, in cyanotic states, in disorders of the liver, such as cirrhosis and cancer, in cancer of the stomach, and especially in myxœdema.

Irritability of temper, common enough in sick children, is especially common in two diseases of adults—namely, phthisis and diabetes; it is also seen in the gouty and in various forms of dyspepsia, and may accompany painful conditions, such as toothache or sciatica. Feelings of terror occur in hydrophobia, in delirium tremens, and possibly in chorea and Graves's disease.

Actual insanity occurring in bodily diseases, says the author, should not include the insanities connected with mental bodily changes, such as those of puberty, childbirth, and the climacteric and senile periods. Insanity may occur in any of the following classes of disease: 1. Organic disease of the nervous system, whether cerebral or spinal (including Graves's disease). 2. Disease of the heart. 3. Disease of the lungs (excluding phthisis). 4. Disease of the digestive organs. 5. Disease of the urinary and generative organs. 6. Certain general diseases, such as gout, diabetes, and myxœdema. 7. Diseases caused by germs, including tuberculosis and rheumatic fever. 8. Vegetable and mineral poisons. 9. Traumata, including surgical operations.

Among the diseases caused by germs we find a comparatively large amount of mental disease. Very rarely pneumonia is accompanied by true acute delirious mania (to be distinguished from delirium tremens, so commonly seen in the pneumonia of alcoholics). After pneumonia and typhoid fever, a stuporose demented condition, or a melancholia with delusions of suspicion and poisoning, may occur, these cases almost invariably ending in recovery in a few days or weeks. Influenza may set in with very acute mania, with great excitement, delusions, and hallucinations, recovery occurring as a rule; or there may be suicidal attempts in the early stage; after influenza melancholia may set in; less frequently, mania.

Dr. Reynolds's experience has led him to draw the following conclusions:

1. It is a comparatively rare occurrence for actual insanity to develop during the course of bodily disease. 2. In general hospitals mental disease most commonly occurs after fevers, poisons, injuries and operations, and heart disease (in about this order of frequency). 3. In the early stages of fevers and after injuries and operations mania is the common form of insanity, but in other conditions depression is more common; but the commonest form is an insanity with marked delusions of persecution (often associated with hallucinations of hearing), such as one sees in phthisis and heart disease and after typhoid fever. 4. There is no special form of insanity connected with special bodily disease, so that it is

impossible to diagnosticate the bodily disease from the mental symptoms present (except the peculiar mental state of alcoholic paralysis). 5. Insanity occurs with unusual frequency in bodily diseases associated with peripheral neuritis, as in poisoning by alcohol, carbon bisulphide, and lead; pellagra, typhoid, typhus, scarlet, and rheumatic fevers, influenza, pneumonia, phthisis, syphilis, septicæma, rheumatism, gout, and diabetes. Is it possible, he asks, that in these conditions the factor which causes the changes in the peripheral nerves causes also some similar changes in the multitudinous internuncial fibres in the brain, and so produces disturbances in the normal cerebral reactions which go to make up a healthy mind? 6. Where the cause is not continuous—such as the poisons, the fevers, and the traumata—the mental symptoms in the great majority of cases disappear; in heart disease and phthisis they may disappear and reappear from time to time; but in some cases, such as the insanity connected with gouty kidney, they disappear only with death.

Genito-urinary Complications due to Influenza.—The *Union médicale* for September 28th contains a review of an article by M. Lamarque, who has recently studied this class of complications. According to him, the poison acts very often on the kidneys. In the simplest cases there is a somewhat intense inflammation of the glomeruli, with slight albuminuria, which lasts for several days and then disappears without leaving any traces and without modifying the progress of the disease. In other cases, fortunately much rarer, it produces serious nephritis, which from the start exposes the patients to symptoms of renal insufficiency, and death from uræmia may be very rapid. However, the nephritis of influenza is recovered from in the majority of cases; but it may also pass into the subacute or chronic state. M. Lamarque says that there may be two forms of nephritis in influenza, the hæmorrhagic and the albuminous. In the first form hæmaturia is the first symptom; in the second form acute Bright's disease with albuminuria and a more or less extensive œdema is observed.

Fiessinger, says the writer, was the first to describe grippal nephritis, and in his work on grippal infection he admits the existence of transitory inflammation of the glomeruli with albuminuria, of acute hæmorrhagic nephritis without œdema, and of acute Bright's disease. The renal complications of influenza have been studied also by Leyden, Diard, Turoche, and others. Comby and Le Gendre have published observations showing that grippal hæmaturia may be due to simple fluxion.

The bladder may be the seat of congestive symptoms, according to Fiessinger, which manifest themselves by a frequent desire to urinate and by trouble during micturition. There is sometimes hæmaturia, and it may supervene independently of any application of blisters. According to Comby, cystitis may be persistent, but usually it disappears at the same time with the influenza.

Fenwick has observed atony of the bladder rather frequently, especially in subjects whose bladders have been very much distended during the height of the disease. This author also insists on the relative frequency of catarrh of the prostatic portion of the urethra, with neuralgic radiations. These symptoms are also observed among women.

Gottschalk has seen uterine hæmorrhage supervene on the first or on the second day in influenza, accompanied by lumbar and sacral pains and by dysuria. The uterus was tumefied, softened, and very sensitive. This author also admits the existence of an infectious metritis. The hæmorrhages last for from five to eight days.

Influenza predisposes the patients to puerperal infection, and suppurative symptoms may also set in during pregnancy. Abortion and premature delivery have also been observed during the later epidemics of influenza, and this is attributed to the cough and to hyperthermia. These two factors, says the writer, may have an influence in certain cases, but it is certain that the congestive troubles directly produced by the influenza play a very important part. As, on the other hand, congestion can not explain the symptoms of suppuration and of septicæmia, we must attribute them to infection. The hæmorrhages depend on acute endometritis, and they may occur in women who have undergone ablation of the Fallopian tubes and of the ovaries. With regard to puerperal infection, it depends on the streptococcus.

Lesions of the testicle are not very rare, and they may or may not be coincident with urethritis.

Cardiopathy following Eruptive Fevers in Children.—At a recent meeting of the Medical Society of Prague, a report of which is published in the *Presse médicale* for September 28th, Dr. Pollak remarked that it was generally admitted that all eruptive fevers might at any moment become complicated with endocarditis. The points, he said, which were still disputed related to the question of prognosis. The want of accord between authors was explained, however, by several facts. First of all, exanthematous endocarditis was rare, and its diagnosis was scarcely easy. In fact, while French authors made the diagnosis of endocarditis in these cases every time a souffle existed, Litten held that such a diagnosis required the simultaneous existence of the souffle, hypertrophy of the heart, arrhythmia, etc. Whatever it might be, said Dr. Pollak, the souffle which supervened during the course of an eruptive fever persisted for a long time, and generally it was not of mechanical origin.

Dr. Pollak had observed endocarditis following two cases of scarlatina and one case of measles. In the first case the souffle had disappeared at the end of nine months, and in the second case all the concomitant symptoms of valvular endocarditis had developed later. The two patients had presented during the course of the erythema articular complications with febrile attacks, but these complications had appeared after the endocarditis had been established.

The New York Academy of Medicine.—At the last general meeting, on Thursday, October 17th, the order for the evening was to be a paper on The Question of Operative Interference in Abscess of Chronic Tubercular Disease of the Joints, by Dr. Newton M. Schaffer.

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 21st inst., the following papers will be read: The Bacteriology of the Normal Conjunctiva, by Dr. Charles J. Foote, of New Haven; and Bacteria and Ophthalmic Surgery, by Dr. F. M. Wilson, of Bridgeport, Conn. Cases will be presented and instruments exhibited.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 23d inst., a paper entitled Deflections of the Nasal Sæptum will be read by Dr. Emil Mayer. There will also be a demonstration of Kirstein's autoscope and of Schmidt's electric saw and vibrator by Dr. J. W. Gleitsmann. Cases will be presented and a variety of new laryngeal, tracheal, and nasal instruments exhibited.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 24th inst., Dr. J. B. Mattison, of Brooklyn, will read a paper on Morphinism in Women, and Dr. E. H. Grandin will read one on Some Points in the Diagnosis of Ectopic Gestation. Cases will be reported, and specimens and instruments exhibited.

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Original Communications.

THE OCCURRENCE OF GOÎTRE AMONG THE INDIANS OF THE UNITED STATES.

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Although of frequent occurrence in certain portions of the European Continent and central Asia, bronchocele has usually been considered one of the rarer affections in the United States, and medical literature is conspicuously meagre with regard to its occurrence in this country; hence a report on its prevalence among certain tribes of Indians may be of interest.

While serving with troops at the agency of the Northern Cheyennes, in Custer County, Montana, the attention of the writer was directed to the great frequency of this disease among these Indians, and interest was further aroused when it was learned that goître was also common among the Crows of the adjacent reservation, and among other tribes resident in Montana and vicinity.

It was ascertained that, however prevalent it might be among Indians, goître did not seem to occur in the whites living on or near the several reservations; so, with a view of determining a possible race predisposition to this disease, a series of some twenty-five questions bearing on this affection in all its phases was sent to the Indian Service physician at each of the sixty-three agencies, and full replies have been received in all but three instances.

According to the report of the Commissioner of Indian Affairs for the year 1894, the total number of Indians in the United States, excluding Alaska, was 251,907. Of these, 96,764 were not located on reservations under the charge of the Bureau of Indian Affairs, and were not under the professional care of Government physicians. These Indians were scattered all over the country, and, as there was no means of estimating the prevalence of bronchocele among them, they were of necessity disregarded in the preparation of this article. The total number of Indians at the three agencies from which no reports were received was 7,300, leaving a remainder of 147,873. Of this number the Indians located on reservations reporting goître as unknown within their limits amounted to 70,670, while those living at agencies where the disease occurred amounted to 77,173. From these latter reservations there were reported about 1,823 cases of bronchocele, being 2·36 per cent. of the total population of these reservations, and 1·23 per cent. of the 147,873 Indians from whom positive and negative reports had been received. This proportion, although apparently high, nevertheless probably represents the minimum rather than the maximum, as a large number of cases, particularly in the early stages of the affection, never come under treatment and are seen by accident if at all. In this connection Dr. Welty writes from the Shoshone and Arapahoe Agency that "it is highly probable that cases of goître are much more numerous than my observations would show, owing to the practice among the squaws of hiding their necks with their blankets." Dr. Howard reports that "our (Menominee) Indian women are shy and timid, and so seldom seek for treatment for goître. As it is so general, they look upon it as something which they must have, and so do not seek to have it cured. The cases which were seen came to be treated for some other disease." Dr. Blachly, of the Southern Ute reservation, informs me that he "has not treated more than half the cases on this reservation," and the testimony of other physicians would corroborate the above extracts. It is reasonably probable that fifteen or twenty per cent. more cases exist than ever come under the notice of the agency physician.

The following list includes the several tribes of Indians in which goître occurs, and is based on the proportion of cases occurring in the thousand individuals:

Yankton Sioux and Assinniboines	Northeastern Montana	2–1,000
Lower Yankton Sioux	Northwestern Dakota	5–1,000
Uncpapa Sioux	South Central Dakota	1–1,000
Santee Sioux	Northwestern Nebraska	20–1,000
Blackfeet Sioux	Western Dakota	20–1,000
Ogalalla Sioux	Southwestern Dakota	15–1,000
Two Kettle and Minneconjou Sioux	Southern Dakota	10–1,000
Brule Sioux	Southern Dakota	40–1,000
Crows	Southern Montana	100-1,000
Menominees	Eastern Wisconsin	100–1,000
Bannocks and Shoshones	Southeastern Idaho	3–1,000
Piutes and Shoshones	Northern Utah	4–1,000
Arapahoes and Shoshones	Northwestern Wyoming	10–1,000
Southern Utes	Southern Colorado	30–1,000
Uncompahgre Utes	Northeastern Utah	50–1,000
Chippewas	Southern Minnesota	2–1,000
Arickarees, Mandans, and Gros Ventres	Northwest Dakota	33–1,000
Blackfeet and Piegans	Northern Montana	4–1,000
Northern Cheyennes	Southern Montana	150–1,000
Nez Percés	Central Idaho	25–1,000
Poncas	Indian Territory	10–1,000
Port Madison	Western Washington	1–1,000
Papagoes	Southeastern California	1–1,000
Mission and Tule Indians	Southern California	10–1,000
Otoes, Tonkawas, Miamis, Shawnees, Peorias, Kaws, Ottawas, Senecas	Indian Territory	3–1,000

As to geographical distribution, this disease is most prevalent in the southern part of Montana. It is found commonly on the single reservation in Wyoming and on the several reservations of Utah, Idaho, and Colorado on the immediate western slope of the Rocky Mountains. It occurs very frequently in the western portion of the Dakotas, especially in the region of the Black Hills, but is unknown in the eastern part of these States. This region includes the Crows, Cheyennes, Utes, Shoshones, Bannocks, Arapahoes, Gros Ventres, Mandans, Arickarees, Nez Percés, Brule, Two Kettle, Minneconjou, Ogalalla, and Blackfeet Sioux, a total of 18,182 souls, and from it were reported 764 cases of goître, or something over 4·2 per cent. of the total Indian population. Goître is also relatively common among the Chippewas of Minnesota, and extremely so among the Menominees of eastern Wisconsin. With the exception of a single reservation in southern California, this disease is unknown throughout Washington, Oregon, western Utah and Idaho, California, Arizona, and New Mexico, although this region contains a comparatively dense Indian population, and includes such large and powerful tribes as the Apaches and Navajoes.

Altitude seems to exert but little influence on the occurrence of goître. While the "goître belt" seems to follow, in a general way, the ridge of the Rocky Mountains, it appears to be the tribes living at the base of the mountains which are affected rather than those located among them. There is an altitude of only 2,500 to 6,000 feet on the Cheyenne and Crow reservations, where probably the highest percentage of cases is found, while among the Shoshones and Utes, at an elevation several thousand feet higher, goître is very much less frequent. The Apaches of Arizona are essentially mountain Indians, and several of their reservations are probably located at a considerably greater altitude than those of any other tribes, yet this disease is unknown among them. Dr. Wainwright, who finds goître a common affection among the Mission and Tule Indians of southern California, writes that he has seen "a case develop on the Colorado desert at sea level within six months—the water being too warm for drinking purposes." This disease is of rare occurrence among the Sioux of Standing Rock Agency, on the Missouri near Bismarck, but is extremely frequent among the Mandans, Gros Ventres, and Arickarees located on the Fort Berthold reservation—somewhat farther to the north on the same river—and living under apparently identical geographical and climatic conditions. One of many other parallel instances is to be found among the Sisseton Sioux in the eastern portion of South Dakota and the Minneconjou and Brule Sioux resident in the western portion of the same State; yet in the former goître is reported as unknown, while in the latter about four per cent. of the total population are affected with it. Throughout all the western country the water is usually more or less impregnated with the salts of calcium and magnesium; yet a tribe which, like the Assinniboines, drinks the highly alkaline water of a stream like Milk River may entirely escape the disease; while the Crows, using the purer water of the Bighorn, are very frequently affected, and the Menominees, living on the western shore of Lake Michigan, have every tenth member of their tribe so diseased. That the susceptibility to this disease is not a tribal idiosyncrasy is shown by the fact that the Gros Ventres, living on the Fort Belknap reservation in eastern Montana, are not at all affected; while the disease is common among the members of the same tribe located in northwestern Dakota, some two hundred miles to the eastward. Perhaps the best illustration of the influence of locality on the production of the disease is shown among the Cheyennes, a tribe whose range formerly included eastern Wyoming and Colorado, western Kansas, and the Indian Territory. In 1877 some 4,500 of these Indians were located by the Government near what is now Oklahoma. Becoming dissatisfied about two years later, some 1,200 of them broke out and fought their way back to southern Montana in the vicinity of Miles City, where they remained for a number of years. While they were resident here, goître, a disease until then unknown in the tribe, appeared among them, and, when they were moved up along Tongue River and the Rosebud some time later, the affection greatly increased in frequency. Dr. Westfall, who has professional care of the 3,100 members of the same tribe which remained in the Indian Territory, has recently written me that "this disease is extremely uncommon among them," and his opinion is corroborated by the Indians themselves. Furthermore, about five years ago a band of these same Cheyennes, never previously affected with goître, were transferred from a reservation in Dakota to this Cheyenne Agency on the Rosebud, with the result that this disease is already highly prevalent among them.

All testimony strongly bears out the statement that no constant conditions of water, altitude, or topography are the causes of goître; but that there is, nevertheless, some inappreciable but none the less active endemic influence by which this disease is fostered in certain localities can not be disputed. In this connection Dr. Howard writes: "I have learned from an interpreter that goître was almost universally found among this (Menominee) tribe of Indians some fifty or sixty years ago, when they ranged as far south as Illinois and as far west as Iowa and Missouri; and to-day the largest number of cases are found among those of the tribe who live in the most primitive state. Only three or four have applied for treatment for this disease, which treatment, when given, usually fails for want of persistence in carrying out my orders. On my visits about the reservation I constantly see new cases and the proportion of such cases is much larger than I have ever seen either among negroes or whites. I looked over the case book for the past eight years and find only one case of goître recorded thereon, which shows that few of the women so affected ever seem to think it serious enough to apply for a treatment which is necessarily unsatisfactory. Living as they do in filth and vermin, and being ill-fed, goître and scrofula develop to a degree unknown among the whites, or even those Indians who have married or mingled with the whites of this region."

That there is a racial predisposition to this disease is beyond question. Every agency physician who has seen much of it among the Indians appears to be firmly convinced as to their special susceptibility to it. Of the 1,825 cases of bronchocele reported only a very small fraction occurred in mixed bloods and but two cases in whites—the latter, curiously enough, occurring on reservations where the Indians themselves were entirely free from the disease. At the Cheyenne Agency on the Rosebud, where goître is most prevalent, the disease is unknown among the white settlers living on or around the reservation, although they were in almost all instances located there before the reservation was set aside and the Indians were placed thereon. These settlers have never been removed, and have lived, except as regards diet and hygiene, under the same conditions as the Indians themselves. Dr. Spencer writes that "it is very much more frequent among the Chippewas of Wisconsin than the surrounding whites," and Dr. Wainwright reports that among the Mission Indians it occurs six times more frequently in full bloods. "The Nez Percés are more liable to goître than the surrounding whites" (Neblitt), while "among the Brule Sioux it is more frequent in full bloods, although the habits, as to whether more Indian or white, play a prominent part in its causation" (Morris). "Among thirty-seven cases (Mandans, Gros Ventres, and Arickarees) two half breeds have goître; no whites" (Finney). "Among the Blackfeet eighty-five per cent. are in full bloods, thirteen per cent. in half breeds" (Martin). "Among the Menominees, Yanktonais, Blackfeet, and Ogalalla Sioux Indians are more frequently affected, then half breeds, and then whites" (Daniel). "Frequent among southern Utes; no cases in whites" (Blachly). "Largest number of cases in full blood (Menominee), next in half breeds, and two or three cases among the almost white" (Howard). "Great preponderance among Indians (Arapahoes and Shoshones). Almost confined to full bloods" (Welty). "Much more frequent among Crow full bloods" (Baxter).

As among whites, Indian females are much more prone to this disease than males are, but the disparity as regards sex is probably even more marked. Further, this disease, when it develops in males, does not seem to advance to the extent or with the rapidity observed in females. While definite figures were not obtained on this subject, it is highly probable that fully eighty per cent. of all cases occur in females. Dr. Daniel, who has had seventeen years' experience among tribes where this disease is common, writes: "Females are almost exclusively affected. I do not remember to have seen a male—Indian or half breed—with the disease." "It occurs in (Menominee) females in ninety per cent. of cases seen" (Howard). "Seventy-five per cent. of cases (in Yanktonais) are in women" (Atkinson). "Three quarters of my (Ute) cases are in women" (Blachly). "Among the Cheyennes females are very much more frequently affected than males" (Silberstein). "Males (Brule Sioux) have this disease very rarely" (Morris). "Females (Minneconjou Sioux) almost entirely in this region" (Michael). "Of cases treated among Blackfeet, seventy-five per cent. are in females" (Martin). "Very much more frequent among Chippewa females than males" (Spencer). Dr. Montezuma, physician at the Indian school at Carlisle, has visited many tribes for the purpose of securing pupils for the school. He writes that females are universally much more affected with goître than are males.

The average age for this disease to begin is from twelve to fourteen years of age, or about puberty. There seems to be some relationship between the establishment of the sexual functions and the appearance of the tumor, the latter seldom developing in girls before the first menstruation. The occurrence of the menopause, however, by no means necessarily results in the disappearance or diminution of the tumor; but the bronchocele, once developed, usually persists throughout life unless dissipated by appropriate treatment. In some instances goître develops earlier or later than puberty, but there appears to be no instance in which it is congenital. Simple bronchocele may develop after the fortieth year, but such instances are rare. In about ninety per cent. of all cases the disease develops within the ten years succeeding pubescence. "Among the Minneconjou Sioux this affection generally commences about puberty, but I have seen it commence in the first year and after fifty" (Michael). "One case was reported as developing in infancy—child of an Arapahoe mother, who also had goître and who had two other daughters who developed the disease about puberty" (Welty). "Puberty, sexual excitement, and pregnancy have each seemed to be causative in its development" (Dougan). "I think that puberty favors its development" (Daniel). "More often develops at puberty. Menstruation and pregnancy favor its growth. Have never seen it originate at the climacteric or seen its course modified at that time" (Bull). "Puberty seems to determine its development" (Welty). "Puberty certainly does influence the origin of this disease among the Brule Sioux" (Morris). "I know of a case in which the first appearance was coincident with suppressed, or rather vicarious (epistaxis), menstruation" (Dumble). Dr. Silberstein has seen it occur among the northern Cheyennes as early as the second and as late as the fortieth year, while Dr. Robinson has seen it develop among the Uncompahgre Utes in the first and sixtieth years.

It is extremely difficult to estimate the period necessary for the endemic influences to act on the economy in the production of goître. The Indians themselves can not or will not say, and the time would probably vary with the personal equation of the individual. While data are much too scanty to warrant any definite opinion as to the period of incubation, it is probably rather a matter of a year or so than one of a few months. Dr. Bridges thinks that "the disease certainly makes slower progress than among whites." Dr. Carroll saw the disease develop in a Roman Catholic sister at the school on the Fort Belknap reservation within a few months after her arrival, and Dr. Wainwright saw it develop on the Colorado desert after a residence of six months.

That this disease is hereditary there can be no doubt. Nearly every report received gives instances in which several cases are noted in one family, or where the disease has developed in several generations consecutively. Probably the best expression of the views generally held is given by Dr. Michael, who writes that "while, generally speaking, goître is hereditary, the taint can not be definitely traced in all cases." Dr. Montezuma, of the Indian School at Carlisle, considers that "it is generally inherited. Upon my tours for pupils through North Dakota, Idaho, Wisconsin, Minnesota, and Michigan, whenever I see a girl with goître the mother is almost always affected with the same disease." Dr. Martin, of the Blackfeet Agency, finds "eight cases in four families"; while Dr. Silberstein, of the Northern Cheyenne Agency, reported a father, mother, and six children as all affected with goître. Dr. Daniel has seen an Ogalalla Sioux mother and her three children so affected, and Dr. Blachly writes that "among the southern Utes this disease seems to occur in families." Dr. Howard reported the case of a Menominee mother with goître who had a goitrous and idiotic daughter. Dr. Welty knew an Arapahoe woman who was, with her three daughters, affected with goître, and Dr. Atkinson writes that he is treating twin sisters (Yanktonais) for this affection.

Among the Indians themselves various causes are considered as operating in the production of bronchocele. The Crows believe that it is caused by singing; the Blackfeet and Chinooks attribute it to lack of sunshine; while the Brule Sioux consider it to be due to a ruptured blood-vessel caused by some unknown power. Among the Yanktonais the medicine men think it to be due to a derangement of the reproductive organs, while the Mandans, Gros Ventres, and Arickarees attribute it to syphilis. The Cheyennes believe it to be due to residence in a country infested with gophers, and maintain that the dog—an animal which is frequently observed to be goîtrous—may acquire the disease from digging at gopher holes.

Among the Indian Service physicians there were found some who were unwilling to commit themselves as to the probable ætiology of this affection, and a still smaller number who believe that altitude or the use of water containing an excess of the salts of calcium and magnesium has anything to do with its causation. It will be noticed that this disease attains its maximum in localities where the alkalinity of the water is not the greatest nor the altitude particularly high, but seems to exist in various parts of the continent under apparently diverse conditions of climate and topography. If alkalinity of water is to be considered the all-important factor, goître should occur in nearly all the tribes of Indians living in the vicinity of or west of the Missouri River, while if residence in a mountainous country is a cause, the thousands of Indians resident in Arizona, New Mexico, and throughout the mountains of the Pacific slope should also be affected—which is not the case. There seems to be little evidence to show that syphilis exerts any direct influence on the production of goître. Syphilis is frequently associated with this disease, but this is rather on account of the fact that so large a proportion of Indians are syphilitic than that there is any particular relation between the two affections. The weight of testimony as regards the scrofulous diathesis, however, would seem to show that this latter disease may predispose to goître through its tendency to glandular enlargement and through the depressed and non-resisting condition of the system which it induces. Anæmia and close intermarriage are mentioned as causes only as they are depressants of the nervous system. It is very possible that the universal custom among the squaws of carrying heavy weights across the shoulders with the straps bearing against the pectoral muscles and the lower part of the neck may act as a cause in those already predisposed to the disease by mechanically interfering with the venous circulation of the neck. The consensus of opinion would seem to be to the effect that lack of proper tone in the nervous system, induced by anything which is detrimental to the highest mental and physical development, predisposes to goître. Exophthalmic goître, as is well known, is frequently consequent to overexcitement and excessive mental worry, and simple bronchocele may be looked upon as a local manifestation of deeper-seated conditions, the enlarged gland being considered as symptomatic rather than the disease itself. The ætiology of the affection probably depends upon a variety of causes rather than a single agent. Lack of sufficient and proper food, associated with the highly unsanitary surroundings and habits of the average Indian, are undoubtedly powerful in determining this disease, one physician going so far as to say that he has observed a direct decrease in the frequency of this affection as the habits and customs of civilization are the more closely approached. The inappreciable endemic influences, with heredity as a most important predisposing factor, are undoubtedly the main elements in determining the occurrence of goître, but what these other factors are, in the absence of water and altitude, it is impossible to say. It would seem better, nevertheless, to leave the question unsolved than to accept hypotheses which are incapable of giving a satisfactory explanation of the ætiology of this affection.

Dr. Silberstein writes: "I do not think that drinking water is the cause, as otherwise the white settlers living here (Northern Cheyenne Agency) before these Indians would also have the disease. The almost exclusive meat diet may favor the production of goître." Dr. Bridges also forcibly writes as follows: "Among these people (Yanktonais) can now be seen the evil effects of the transition stage between barbarism and civilization. I have special reference to their mode of living, which is in small log or sod houses, almost hermetically sealed, and permitting of almost no ventilation whatever. I exclude as a cause the use of water, either from melted snow or that impregnated with an excess of certain of the earthy salts, for the reason that these people did not suffer with this disease previous to their arriving at the stage of civilization when they found it necessary to shut themselves in an absolutely unventilated house with the concomitants of an excessively high temperature, overcrowding, the society of half a dozen dogs, and not infrequently two or three open sores upon some member of the company."

Among the Indians goître does not seem to be associated with cretinism, Dr. Martin, of the Blackfeet Agency, reporting the only case in which these two affections were conjoined. This case occurred in a girl, twelve years of age, who had died of pneumonia some few weeks previously, and consequently a careful examination and measurements of the patient could not be secured. There were seven cases reported where the mind was affected to a greater or less degree. Dr. Howard writes: "There are several weak-minded Indian women on this reservation who have very large goîtres. I am inclined to the belief that the mind may be affected in this disease." Dr. Howard reports the case of a girl, "aged about nineteen years, who had a goître 4 × 3 × 1 inches. She was an idiot and seemed void of any intelligence whatever. The mother had a well-developed goître."

Very few of these cases are associated with exophthalmia, although in the later stages of the disease there is frequently functional irregularity of the heart, the irregularity of the heart's action apparently bearing a direct relation to the size of the tumor. It would seem as if the exophthalmic form of the disease is more frequent among whites than among Indians. Dr. Baxter found it among the Crows "in a few cases, less than one per cent. of all," while Dr. Daniel reports the case of a Menominee woman "who was exophthalmic with great cardiac disturbance." Dr. Silberstein says of the northern Cheyennes that "twenty-five per cent. of cases have palpitation of the heart. I have never seen a case of true exophthalmia." Dr. Blachly reports that about five per cent. of his cases among the southern Utes have functional heart affection but no exophthalmia.

The tumors are usually unilobed, soft, and fluctuating in the early stages, but become harder and multilobed as the disease progresses. Such a course is by no means invariable, however, as many physicians report that all forms are found on their reservations. The average size of the tumor is about that of a man's fist, although the size seems to vary in the several tribes so affected—*e. g.*, among the Utes no very large tumors are seen, while among the Crows the hypertrophy of the gland is very great. In certain tribes this disease advances only to a prominent fullness of the neck, which is nearly always hidden by a high collar or blanket, and probably the average size is smaller than among whites with the same disease. As to the maximum, a number of cases where the enlargement was six inches in diameter were reported. Dr. Dougan has known several instances "in which it has covered the entire anterior portion of the neck, and protruded beyond a vertical line from the symphysis of the lower maxillary," and Dr. Morris knows "one Indian woman who has one the size of a water bucket."

The symptoms produced seem to vary in intensity with the size of the tumor. There appears to be cardiac irritability in nearly all advanced cases, sometimes dyspnœa, and often dyspepsia and anæmia. There is impairment of voice in all advanced cases, and in one instance complete aphonia was noted. The tumor frequently interferes with deglutition, and produces a peculiar duskiness of the face by turgescence of the veins. There is an overloading of the cerebral sinuses, resulting in severe headache, tremors, and vertigo. A peculiar condition of nervous irritability is often seen in these cases, with depression, apprehension, loss of memory and power of application. In the exophthalmic variety, besides the classic symptoms, diminished chest expansion is considered to be a pathognomonic sign. The reproductive apparatus also appears to be affected to a greater or less degree. Dr. Montezuma writes that "girls who have goître do not menstruate regularly," and Dr. Martin says that "amenorrhœa is quite frequent." One interesting case was reported in which there was great temporary enlargement of the goître during the menstrual period, scanty menstruation, and complete loss of the sexual appetite. "In the majority of cases of simple bronchocele, however, there are no distressing symptoms, and the patients do not apply for relief."

The usual treatment employed seems to consist in the internal and external use of iodine in some form, either alone or in connection with mercury. This treatment is not at all encouragingly spoken of when applied indiscriminately, but seems to have good effects in a limited number of cases, usually in recent cases occurring in children under the age of puberty. Permanent cures frequently result in such selected cases, but when the disease is of long standing the occasional temporary improvement soon disappears on discontinuing the treatment. Electricity is spoken of as an agent of possible good and one of which the patient should receive the benefit. Massage, the use of salt fish, and salt-water bathing are favorably mentioned, while removal beyond the limits within which the disease is endemic is rightly held to be of the greatest importance. Ergot has been employed considerably, as have strophanthus and Calabar bean, but without any particularly favorable results.

Medicinal treatment among Indians is carried on under great difficulties, as the patient may take no medicine at all, or use up a week's treatment at a single dose. One fatal case of poisoning by tincture of iodine came to the notice of the writer, the Indian reasoning that if the medicine was good externally it must be better internally, and swallowing some ounces of it.

"Internal treatment has been of very little value when the tumor has been very large, but is of benefit when the tumor is small and growing. Judicious treatment improves the health and abates the progress of the disease as the conditions favoring goître are overcome. Iodine, strychnine, bark, and iron have served me best, but counter-irritants have, no doubt, played their part where the tumor was cystic or hyperplastic. If the tumors are hard, the treatment may be of benefit while continued, but permanent cures rarely occur. Indians constitute a class of patients which has very little respect for any treatment (by a white physician) which does not have an immediate and visibly positive effect" (Dougan). Dr. Wainwright states that he has "best success with beechwood creosote, beginning with three drops and increasing to fifteen drops three times a day. I have seen four cases in which the tumor entirely disappeared under the use of creosote, no other treatment being used." This treatment would seem worthy of a more extended trial.

The salient points of this article would seem to be as follows:

That there is a strong racial predisposition to goître among Indians.

That goître is a distinctly localized disease.

That goître does not appear to be caused by high altitude, climate, or water containing an excess of calcium salts.

That this disease appears to be favored by unsanitary surroundings, depressing constitutional conditions, and an improper and excessively nitrogenous diet.

That hereditary influence is a prominent factor in the causation of this disease.

That sex and puberty exert strong influence in its production, and that there appears to be an intimate relationship in women between the thyreoid gland and the reproductive organs.

That cretinism is extremely rare in connection with this disease, and exophthalmic goître moderately so.

That the tumor is correspondingly smaller than among the whites, and that localities apparently affect the growth of the tumor as well as its frequency.

That the usual treatment is unsatisfactory.

In concluding this article the writer would acknowledge with thanks the uniform courtesy and consideration of the physicians of the Indian Service, without whose kind coöperation the preparation of this article would have been impossible.

MODERN METHODS OF TREATING DISEASES OF THE NOSE AND THROAT.*

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Our interest in diseases of the nose and throat seems to centre upon treatment—that which cures. But first, we must have a knowledge of the diseases, and it may be well to know how we get them—the ætiology—and to consider their symptoms, complications, and effects.

Diseases of the nose and throat are more numerous—of more frequent occurrence—than at first thought we might suppose; there is a longer list of them, and a larger train of evil effects, than is likely to be recognized by one who has not carefully considered this matter. In the twenty minutes devoted to this subject I can hardly do more than mention a few of the commoner diseases, such as are of most frequent occurrence, and cause, in the aggregate, the most suffering.

Things we see oftenest impress us the least. We give more attention to the infrequent diseases than to those we are called oftener to treat. Common, every-day conditions lose their terror, however bad they may have seemed or really were. This law (of callousness) explains our indifference to a common cold, which often is but the initiatory stage of grave and fatal maladies.

President Lincoln is said to have observed that "the Almighty must consider common things important, for he made so many of them." These diseases are important because they are so numerous and so far-reaching in their effects. The opprobrium of our profession is in not curing common ailments, those little ills which, in the aggregate, cause greatest distress, not the rare, infrequent, obscure conditions.

Diseases of the nose and throat may be acute or chronic, simple or complicated, local or general, organic or traumatic, acquired or congenital, benign or malignant. An entire catalogue comprising the acute, subacute, and chronic stages would be long and tedious and not to our purpose. But we should be able to distinguish syphilitic, tuberculous, cancerous, exanthematous, diphtheritic, mycotic, traumatic, and other less important conditions. We must recognize the peculiarities of various tumors; the condition of the numerous sinuses (accessory to the nose and throat), excessive or scanty secretions and their character, empyema, necrosis, etc.

We have coryzas, congestions, inflammations, hypertrophies, hyperplasias, atrophies, and ulcerations; not only these special diseases of the nose and throat, but many so-called constitutional diseases which affect these organs seriously. Of the two hundred and fifty more or less distinct diseases that flesh is heir to, a large percentage show effects in the throat, not mere complications, but as a part of the disease; we look there for confirmation of our diagnosis.

There are never two noses alike interiorly, any more than there are two faces alike; it requires the exercise of good judgment and a moderate degree of skill, often, to distinguish pathological from physiological conditions. Cultivated common sense is never out of place when called in consultation to a case of ordinary nasal catarrh.

That which in common parlance is termed catarrh is but a symptom, an expression or effect of a diseased condition. We do not think of bleeding as a disease, but as a result of traumatism or other cause. In the popular mind catarrh means indefinitely (as charlatans teach) a blood disease, a bad breath, difficult nasal respiration, a dry throat, enlarged tonsils, or bad taste. Patients will tell you their palate is down (meaning an elongated uvula), that they have pain in the nose, over the eyes, in the temples, or back of the ears; that they have a hacking cough, a frequent desire to clear the throat, and point to the suprasternal notch, saying, "*There* is all of the trouble." These ills may result from one and the same cause; and I desire especially to emphasize the importance of determining first of all *the cause of that of which the patient complains.*

Having determined the cause, we seek to remove it. If it is a syphilitic sore throat, give "mixed treatment" if you wish, but you will oftener get positive results from the use of large, increasing doses of potassium iodide. I am in the habit of ordering twenty grains, in solution, to be taken in a glass of milk before eating, three times a day. This quantity is to be increased five grains each day until the desired effect is produced, unless undue iodism results, when the medication may be suspended for a few days. Often three hundred grains in a day are taken by a patient. Locally, spray the diseased parts with peroxide of hydrogen and insufflate aristol.

Tuberculosis of the larynx is one of the most distressing maladies humanity is called to endure. Our modern methods of treatment have greatly lessened the suffering and resulted in positive cures in numerous cases. The principle which underlies the various methods of treatment is to destroy the germs in their local habitat by curetting, and applying either pure lactic acid three times a week, pure ichthyol (Dr. Berens's method), or a twenty-grain solution of silver nitrate (as practised by Dr. H. B. Douglass). A later method, which promises excellent results, is the injection of a twenty-five-per-cent. mixture of creosote by means of a special syringe devised by Dr. Chappell, through whose kindness I am able to show you the original instrument for this purpose. You can find a full account of his method in the *New York Medical Journal* of March 30th. Local treatment, other than to soothe and cleanse, is of little benefit, unless resort is had to these heroic measures.

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* Read before the New Hampshire Medical Society, June 4, 1895.

Sarcoma and carcinoma are best treated by extirpation, if that is possible. Dr. Coley and others report some wonderful results from the injection of the specific germ of erysipelas into the tissues surrounding these tumors in cases where they can not be removed.

In treating diphtheria and all acute inflammations of the throat mild medicines given often will serve you far better than harsh and heroic treatment at longer intervals. I do not believe that antitoxine has come to stay. Professor Winters recently gave us (at the New York Academy of Medicine) an *exposé* of its use in the Willard Parker Hospital for contagious diseases. It seemed to do more harm than good.

I know of no surer way to cure diphtheria than to attack it *in situ*. My method which has given best results is to begin at the earliest stage possible, and give the following medicines with unfailing regularity:

No. 1:

℞ Tinct. aconiti	gtt. xx;
Tinct. belladonnæ	ʒ ss;
Glycerini	ʒ iv;
Aquæ gaultheriæ	ad ℥ iv.

No. 2:

℞ Potass. chloratis Sodii bromidi	āā ʒ ss;
Glycerini	℥ ss;
Tinct. ferri chlo.	ʒ ss;
Aquæ	ad ℥ iv.

Dose: Half a teaspoonful for an adult.

These are to be given alternately every half hour, thus bringing the doses fifteen minutes apart. This frequency may seem severe upon the patient, who gets little sleep during the first twenty-four hours, but we have a severe antagonist to combat, and must not relax our warfare till we conquer, which I expect to do with almost as much certainty as I should in a case of measles. In addition to Nos. 1 and 2 I should always use a spray—often and freely—composed of twelve grains of carbolic acid in four ounces of limewater. All these preparations are agreeable to take. I give liquid nourishment freely, milk being ordinarily best, also whisky, sparingly at first, but sufficiently to get the desired effect as a tonic. Bichloride of mercury may be of service sometimes. Intubation or tracheotomy is to be resorted to if necessary.

More frequent than any other disease, more widely distributed, and more destructive to usefulness and happiness, if not to life, is that we have spoken of as causing catarrh. And what is the disease? has been earnestly asked a thousand times. What causes such wide destruction? Has it a specific micro-organism? I think not. Is it a blood disease? No. Can it be cured? Yes. Is it difficult to cure? Not specially. How should we go about it? Remove the cause. What is the cause? Now we have arrived at the starting point; our duty, as surgeons, is to find that cause. Where shall we look? First in the mouth and throat. Here we shall probably find the index which points toward the cause. Observe the tongue, the fauces, the tonsils, and the posterior and lateral walls of the pharynx. A typical case of "catarrh" would show a relaxed uvula, enlarged tonsils, follicular pharyngitis, and thickened and inflamed tissue back of one or both posterior pillars of the fauces. There would be some hoarseness, with a tickling and tendency to cough. Examine, if you please, the larynx; you will find the vocal bands slightly reddened, the whole larynx mildly congested. Look into the superior pharynx. Here is more trouble. The adenoid growth is enlarged; the posterior ends of the turbinate bodies are hypertrophied; the sæptum is thickened, and the whole passage is bathed in a thick, tenacious, muco-purulent fluid. Examine the nose anteriorly. The inferior turbinate body is enlarged, the sæptum more or less deflected. In one or both sides you may see above the inferior body a mass filling the fossa and pressing upon the sæptum. It is exceedingly sensitive, and the mucous membrane generally is congested and hyperæsthetic. Cocaine solution (ten per cent.) applied, blanches and contracts the tissues about the lower turbinate body, and reveals more clearly the middle turbinate, which is still enlarged, though under the full contractile influence of cocaine. If we attempt to pass a probe between the body and the sæptum, we find them in persistent contact—often adherent—and it causes severe pain, often reflected to the supraorbital region, but especially intensifies the habitual pain in the head, wherever it may have been.

The history of this case, as given by the patient previous to examination, is about as follows: frequent and easily acquired cold in the head, pain over the eyes, in the temples, and in the lateral portion of the occiput; eyes watery, sometimes painful, with difficulty in seeing distinctly. The hearing is not so acute as it should be, and there is a buzzing or roaring in the ears. The throat is frequently sore; breathing through the nose is difficult or impossible; and there is mouth breathing, especially at night. The tonsils swell and occasionally suppurate. The stomach is out of order, the bowels are constipated, the liver is torpid, and there is a general tired feeling, with more or less pain of a neuralgic character.

Such cases we see very often. It is difficult to believe the little mass we saw pressing the sæptum (in spite of the persuasive cocaine) to be the cause of all this suffering. But I am persuaded that the hypertrophied middle turbinated body is capable of more mischief, can cause more suffering, directly and remotely, than any other mass of its size in the human body. It will not contract—cocaine has proved that—it must be removed. We anæsthetize it as thoroughly as possible; then, with scissors adapted to the work, shear off such portion as must come away in order to leave the space clear after the parts have healed. Do not cut away any more tissue than is absolutely necessary, but be sure you get just enough. We can not cut at the farther end and must twist off the mass with forceps. This causes some pain, differing greatly with different people, but not so severe as that of the extraction of a tooth. A pledget of cotton wound loosely upon an applicator, moistened in a solution of acetotartrate of aluminum (a drachm to the ounce), and perhaps fortified in its hæmostatic power by a solution of perchloride of iron, is inserted where the tissue has been removed, and a cotton tampon placed in the nostril anterior to the first; this latter cotton to be changed as often as it becomes moist; the former may remain twenty-four hours or longer, as alum is one of our best antiseptics. This operation is the one most frequently required, but any persistent contact of surfaces in the nose that ought not to touch will certainly cause trouble and must be relieved. Herein lies the key to successful treatment of catarrhal affections—*remove the cause.*

In reviewing older methods the contrast is very marked. Eighteen years ago I was taught by one of the best specialists in this country to swab out the throat with a solution of silver nitrate, and make similar applications to the lower turbinated bodies if they were thickened. I regret to say that that man—conscientious and honest—met with such poor results, as he told me, that he determined to give up this special work and devote himself to general medicine, and he is to-day in general practice one of the best.

The evolution of modern methods has been slow and labored, but persistent and successful. In no department of surgery have there been greater improvements than in the treatment of nose and throat diseases. I well remember attending a clinic in Charity Hospital, New York, in 1876, at which Professor Lister did an operation demonstrating his then new theory of antisepsis and disinfection. What marvelous changes have grown from that theory!

We might inquire how a mere contact of surfaces (that ought not to touch) in the nose can cause so much trouble. I answer:

1. The immediate local effect upon two surfaces so sensitive must be irritating, evinced by a tendency to sneeze, by local pain, etc.

2. The nose, being an important organ, directly communicating with the brain and all other organs in the head, must be carefully guarded; hence there are numerous reflex irritations resulting from this primary cause.

3. Secretions, which are normally profuse in the nose, amounting to five or six drachms an hour, are retained by this artificial dam, become acrid, overflow their bounds, irritate adjacent parts, and produce congestions and inflammations—*e. g.*, rhinitis, pharyngitis, faucitis, amygdalitis, and laryngitis.

4. By extension of these induced troubles to other organs —the lacrymal ducts, the Eustachian tubes and middle ears, the accessory sinuses, pharynx, fauces, lungs, and stomach. Ninety-two per cent. of cases of otitis media are induced by extension of nasal inflammation. The effort to breathe through an obstructed nostril produces a partial vacuum, acting as a cupping glass, and causing congestion alternating with undue pressure in the tubes and middle ears. Acrid or purulent secretions are forced into the orifices of the tubes by this pressure, and deafness results in many cases.

I have by no means exhausted the list of evils resulting from obstructions in the nose, but I have mentioned enough to call your attention to the importance of the subject and convince you that the ounce of prevention—removing the cause—is worth many times the pound of cure.

Adenoids at the vault of the pharynx (a secondary disease of childhood) must be removed with forceps or curette, and should be done while the patient is under the influence of an anæsthetic.

It is not so important to excise enlarged faucial tonsils as to cure the cause. I rarely find it necessary to cut them, preferring to take away the irritant. The disease is not often inherent in the tonsil. We should punish the culprit and not the victim.

Wrongs are not righted by deploring them, neither are they corrected by counteracting their evil effects. So diseases are not cured by treating their symptoms, or suppressed by doctoring their results. The terms of success are not subject to revision. Modern methods are founded upon a knowledge of cause and effect. Like labor in childbirth, effort may be spasmodic, but the more constant it is the better. Cures are always difficult and never acquired unless we pay the price. We have to deal with organs that are constantly in use, never at rest.

Organs of so much importance as the nose are always protected by Nature in a special manner; but when we consider the excessive exposure to infections—malarial and bacteriological—to dust and noisome gases, to traumatisms and distortions, we wonder only that we are yet alive.

No. 123 East Thirty-sixth Street.

DIGITALIS.

By JAMES E. FREE, M. D.,
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Digitalis has a wide range of usefulness. Experience teaches the physician to pick out of the *materia medica* the prize-winners. At fifty we do not have so many remedies for disease as at twenty-five. Every milestone on the road to success is disfigured with broken bottles and spilled elixirs of life.

If the therapeutic effect of digitalis is known there need be no timidity in using it. Emergencies arise where it is necessary to push it to the danger line. I once supposed that ten minims of the tincture was the maximum dose, and have a good many crows to pick with the drug as a heart tonic. When heroic doses are needed, there are some finger boards to be watched. Twenty minims may make the patient balk. Nothing is so aggravating as the chronic balker; but if vomiting, headache, vertigo, duplex pulse, slow pulse supervene while digitalis is being given, the patient has gone and done it, and we must ease up on our principles as well as the dose. This is not always so easy as it looks. After a score of years, persistently professing never to have lost a patient with a certain method of treatment, it makes a man feel like a firecracker after it has exploded to see death in the pot for the patient. Professor John S. Lynch, of the College of Physicians and Surgeons, Baltimore, used to be proud of his success in the management of dysentery. Some time after delivering a lecture on the subject, he referred to the matter and said he had met his Waterloo in a bloody flux.

There is a short list of tonics for a feeble heart. Digitalis is at the head; next come strophanthus, alcohol, nitroglycerin, caffeine, strychnine, convallaria. None are so powerful as the first, with the exception, perhaps, of the second, and none at all so reliable. The new-fangled heart's-ease is pretty sure to be like a baseball club—to-day it wins and to-morrow it loses, without apparent cause.

Twenty minims of tincture of digitalis for a case of mitral regurgitation sounds risky. If the face and lips are purple, dyspnœa is urgent, and the body is contorted in the effort to breathe, relief must come quickly or the heart will be drowned in its own blood. Brandy and oxygen inhalations are good temporary expedients, but the desideratum is the removal of the dammed-up tide of venous blood. For this purpose nothing will do so well as the remedy of the granddaddies—bloodletting. Here is a typical case of curative phlebotomy. The pressure on the heart being removed, digitalis is a crutch to support the weakened heart until the circulation is equalized. Carbonic oxide poisoning is slow to disappear, and relief from distention leaves the heart walls tending toward flaccidity, as is the case where there has been muscle and nerve tire. The heart's action is weak, fluttering, and irregular. Digitalis here works as if it had been paid for it. It rouses, strengthens, lengthens, and slows the heart beat. It is a case of whip and spur and bridle.

Patients who have grave heart lesions are supposed to lead quiet, restful lives. But such advice to the majority is only sounding brass and a tinkling cymbal, because it would mean slow suicide by starvation. Digitalis has no effect on causes. It is not an antitoxine for poverty, exposure, tuberculosis, altitude, venereal taint, or alcoholism in the family. Its only value is as a plain, unvarnished tonic. Where it is prescribed, a gradual slowing of the pulse is noticed. The patient loses his terror-stricken aspect, distress abates, and eventually normal sleep comes to lend wings to his recovery. A case of mitral or tricuspid insufficiency which behaves so is favorable. Often those who are seemingly on the ragged edge of dissolution from a hopelessly disorganized circulatory apparatus are tided over the crisis and live to have another whack at life. To treat every attack as if the next one was to be the last is our duty. Deranged heart supply and brain supply cause troublesome insomnia. This latter symptom is not specially alarming to patients. They prefer to stay awake and see themselves die by inches. Exhaustion of the central nervous system produced in this way may insure fatal consequences. Digitalis will keep the heart pounding away with increasing regularity. This tendency to restore the equilibrium of the circulation in the brain counteracts the effect of lengthening the diastole and thus favoring regurgitation.

Some prolific causes of heart disease are not much noticed. For instance, sexual excess, coffee drinking, and bicycle riding. Many people use coffee by the quart at every meal. Physiology tells us that the vegetable alkaloids are tissue poisons. The heart and kidneys do not rebel very strongly against this stimulation for years; but sooner or later a weak back, that tired feeling, palpitation, inability to sleep on the left side, give warning that the time is coming when an insurance policy is comforting to the soul. Valvular strain is at length hard to withstand. An attack of rheumatism now will cinch the heart. Coffee drinkers are usually thin. Leakage of the valves once established, there is thenceforward progressive circulatory ataxia, so to speak. Compensatory hypertrophy begins. Backward pressure is exerted on the right ventricle and lungs. Tricuspid regurgitation is next in order. Then come pulsating liver, pathological urine, venous distention, and dropsy. To counteract this complexus of symptoms, digitalis is a standard prescription. The contract is often as large as that given to the gold cure in inebriety.

Where the mitral pulse is recognized, there not only digitalis is needed, but rest, catharsis, diaphoresis, and diuresis are demanded. Watery catharsis has a more positive influence upon vitality than either of the other measures just mentioned. When the solid constituents of the blood are unduly increased by squeezing out of the system the liquid portion, various functional troubles prepare for a campaign. A positive influence upon vitality is exerted because of the nervous anastomosis between the alimentary tract and other organs. The function of nutrition is needed in Nature's business, and rather than violent purgation in an urgent case of valvular disease, depletion should be encouraged by an alcohol sweat, for instance, and some such prescription as the following given with digitalis:

℞ Potass. nitrat.,
Extract. buchu, } ....āā ʒ ss.
Caffein. citrat.,
M. Make thirty pills.

One dreaded result of large doses of digitalis is vomiting. It is not confined to women, or it would be called hysterical. If the remedy is needed, it may sometimes be pushed, in spite of headache and emesis, by giving it in hot water, and when it must be stopped on account of idiosyncrasy or cumulation, the patient is practically no worse for having the question of tolerance of large doses settled. Perseverance in spite of the stomach for any length of time is not good therapeutics, because in the absence of a temperature curve the stomach is a good clinical thermometer, and when it signals for help it must be handled with increasing care. Five grains of carbonate of ammonium may be combined with digitalis. Irregular heart action can sometimes be converted into mill-wheel steadiness by such an expedient. But it is maintained that digitalis increases the obstacles to its own elimination through the kidneys by increasing vaso-motor activity and arterial tension. Hypertrophy and dilatation may make the effect of the drug uncomfortable and undesirable. In cases of uncomplicated aortic disease the heart beat is not of the kind which begs for digitalis. It is where the vessel is in danger of being swamped, where the blood is already in the boiler room, that an energy-compelling drug wins its victories. If more of the remedy is taken every four hours than can be eliminated by the kidneys, the cumulative action may be avoided by combining with it others which have a depurative action. This is good theory and practice. The following is a good coaxer for the heart and kidneys:

℞ Tinct. belladonnæ................ f ʒ ij;
Potass. acetat.................... ℥ ss.;
Tinct. scillæ..................... f ℥ ss.;
Syrup. scillæ. comp..........q. s. f ℥ iij. M.

There are a few people who respond to digitalis as if by magic, but as a rule there is very little of the black art in medicine. Nearly every result can be accounted for on scientific principles. Syncope follows if rest is not taken, usually in cases requiring energetic digitalis treatment. This is as it should be, or too many half lunatics would insist upon adding fuel to the flame we are trying to subdue by taking exercise.

KNEIPP'S WATER CURE
IN THE LIGHT OF MEDICAL HISTORY.

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The great interest with which a sensational lay press has invested the priest of Woerishofen and all his doings has rendered his rise phenomenal. For reasons, some of which will appear in the latter part of the paper, but more especially for the benefit of suffering humanity, it is meet that the merits and shortcomings, the real value or absence of value, pertaining to the so-called "Kneipp system," which is finding many imitators in this country, should be fairly investigated. Among the numerous descriptions of the man and his methods which have appeared in the lay and medical press none bear the impress of earnest search after truth and entire fairness so plainly as a letter from Dr. L. Goldschmidt, of Bad Reichenhall, published in the *Deutsche Medizinal-Zeitung* of the 8th of August. I believe that it would be a service in the interest of truth to reproduce the following condensed translation. The author approaches his subject with commendable caution and freedom from prejudice. He says in describing the personality of Kneipp: "A splendid and expressive peasant head, with shrewd eyes brightly shining beneath white, bushy eyebrows; a pleasing, attractive face, uniting goodness, shrewdness, dignity, and inspiration in beautiful harmony. The head, which is covered by heavy silver-gray hair and surmounted by a small cap, rests upon a strong, broad-shouldered body of handsome proportions. Priestly habiliments enhance this grand and manly presence. His hands are of gentle mold. Such a man must awaken confidence, which is heightened by the mild voice and Bavarian dialect with which the prescriptions are dictated to the two priestly secretaries. If one may deduce the presence of talent from a man's exterior, it must be confessed that rarely has Nature endowed a man with so many points indicating the true physician as this remarkable priest possesses. To these qualities may be added the well-known disinterestedness of Kneipp, his simple, almost Spartan, mode of life, his amiable treatment of rich and poor alike, and the robust appearance of the healer despite his seventy-four years." But the dictum of Mephistopheles, that "the spirit of medicine is easily grasped," does not hold good at the present time. A physician needs to have learned something nowadays. But our brave Kneipp may boast neither of much learning nor of much knowledge. Kneipp's book, which has passed through forty editions, presents, according to the author, a barren mixture of facts, superficial observation of patients, and the complete ignoring of all those methods of examination which enable the physician to clear up the problems of disease. These are mingled with a lot of monotonous water talk and religious phrases. Failing to learn anything of Kneipp's methods from his book, the author determined to observe it personally. His visit was made in January. His companions in the sleigh which conveyed him from Tuerckheim, the railway station, to Woerishofen, were, without exception, nervous and hysterical individuals, who were filled with joyful hope; poor devils who bore the marks of much privation; some were peasants; one was a Saxon treasury official whose arithmetical labors under the gaslight had produced a painful spot on his bald skull, which he magnified into a brain abscess; another was a thin woman with sunken cheeks and restless eyes that bespoke reduced nutrition and great nervousness. Kneipp's consultations are held in well-appointed rooms; he is assisted by his own bath doctors and many foreign colleagues. Besides the poor devils above described, the author met here princes, noblemen, and women, students, merchants, and even physicians. It was claimed that an Indian rajah and a ruling prince had been cured of long-standing ailments.

"It would ill become one," says Dr. Goldschmidt, "to criticise a man toward whom one feels the greatest kindliness on account of the amiability with which he allowed me a place among the admiring crowd of physicians and priests who sit near him, and who is besides endowed with so many good traits." But a man who poses as an apostle of a new wisdom must bear with a criticism which is undertaken in the interest of truth. The author's surprise was great when his search for something original was rewarded by almost nothing that was new and certainly nothing that was good. If the book was confusing, Kneipp's actual work was more so. The most varied and complicated diseases, forming a clinical material that would be the envy of a professor, are subjected after two or three questions to a treatment differing only in the smallest details. A diagnosis is neither made nor attempted. "What do you complain of?" is the parson's question. "I have headaches"; "I suffer from spasms"; "I have an eruption"; "I suffer from bad digestion"; "I can not sleep," etc. These replies are followed rapidly as thunder follows lightning by the prescriptions, "*Rückenguss*, two seconds, *Schenkelguss*, three or four; *über nasse Steine laufen*" (translated, cold stream upon the back; upon the thighs, three or four seconds; walk upon wet stones). The prescription is written in a little book which is given to the patient. No precious time is wasted on notes, records of results, effects of the douches, and "wet" meanderings. Thirty or forty patients are thus dispatched in an hour. Moreover, although the good priest insists that "water does it all," this is not the case. It is true, he does not use those dreaded "poisons," morphine, quinine, etc., but he has his *fœnum græcum*, hayseed decoctions, etc. It is vain to tell this gifted man that an herb does not become a medicine only by its passage through the druggist's hands, and that his teas, powders, extracts, and tinctures, whose enumeration occupies fifty-six pages of his book, are also medicines, some of which, like alum, aloes, and malefiz oil (which seems to be croton oil), are quite powerful. Hence the dictum that water cures everything is but idle wind. Of the results it is impossible even for Kneipp to judge. Many who were regarded as improved impressed Dr. Goldschmidt as still very sick. He cites a case of psoriasis still covered by eruption and a case of lupus as examples. A young man whose heart was enfeebled by excessive bicycle riding and who slept badly was so much injured by the treatment that he actually dreaded the bed. The author saw many cases of frostbite among the patients who had been walking in the snow and ice by order of the priest. These were regarded as "good signs," "just what he wanted, since the bad blood was thus discharged." An epidemic of typhoid occurred in the children's asylum at Woerishofen, to which a large number succumbed. "Marvelous cures" were always trumpeted abroad, but unfavorable results are passed over in silence. These quacks are like the moon, which shows only its radiant side; the other is wrapped in eternal darkness.

At 4 P. M. Kneipp delivers his celebrated addresses in the theatre—an appropriate place, for they are akin to comedies. The following is a quotation from the stenographic report made by the female scribe who regularly attends them and issues them in print: "There are many young people who have passed through scarlet fever in childhood, which has not fully exploded. Impure matter still remains and produces all kinds of trouble—ulcers of the arms, feet, etc. Four such cases have been observed here this week. How are such cases cured? Are medicines necessary? God forbid! Water alone does it all! Here is a child which had scarlatina three years ago and is now miserable, and for whom everything has been done, but in vain, and yet the child may be cured easily. Apply upon him once a week a shirt dipped in hayseed-bloom decoction (in corpulent children it may be used twice a week). The little fellow should also be dipped in cold water three times a week and afterward put to bed. Advise and help where you can, for it is a grand and humane work! Besides these applications shall medicines be used? It is not necessary, but if we want to give something, the interior may be acted upon by a knife-blade point full of the white powder (burnt bone). Thus the injurious matter is first dissolved and thrown out; secondly, the system is strengthened; and thirdly, the whole body is hardened." Kneipp says that "the infamous infusoria of itch make passages and crossways through the skin, like mice; salves drive the bad stuff inward; douches draw it out. Eruptions on the head and face of children and foot sweats must not be suppressed, because they are manifestations of spontaneous elimination of injurious matter."

Such childish nonsense would not be worthy of notice, says Dr. Goldschmidt, did it not emanate from a professed prophetic source, which some physicians even recognize. Brazenly trumpeting forth of single cures, absolute suppression of all failures, not a trace of honest observation, a reckless recording of cases which gives no clew even to successful ones, are all that he found at Woerishofen. Despite all this, it can not be doubted that many surprising cures occur. Patients who are removed from misery, filth, and sorrow at home to careful diet, good dwellings, humane care, and cleanliness, find cure, or at least improvement, to which the cheapness of the "cure" must contribute. Others, who have been debilitated by fast living and luxurious habits, are restored by the harsh and strict "cure." Cases especially which may be influenced by suggestion from so original a personage may be actually cured. But it may be positively asserted that the *great majority of really sick people find neither improvement nor restoration here.*

It may be argued that physicians are prejudiced against all lay remedies. This is an error, for we have adopted some valuable remedies, like quinine, and some valuable methods, like massage, despite their emanation from laymen.

Physicians are not prejudiced against water as a remedy. They all use it more or less. In faintings, fevers, convulsions, etc., baths and douches, wet packs, and compresses are constantly applied, regardless of their being vaunted by water quacks. The ice bag is used with great success in inflammations and local pain, as a hæmostatic, heart regulator, and antithermic. In suppression of urine wet packs are extensively used; in rheumatism, gout, and defective hæmatosis baths of different temperatures are used. The ready applicability of water, its capacity to adopt varying temperatures and thus to regulate the bodily temperature, its solvent properties, its capacity to irritate and even destroy the skin, its ability to refresh or calm, the fact that it may be used internally as well as externally—all these are qualities which endow it with great remedial virtue. To recognize the latter we do not require to be taught by an apostle who loads the grain of truth which he emits with a ballast of silly nonsense. Moreover, while no physician ignores the great remedial value of water, it would be absurd, if not criminal, to declare it as the only remedy. The use of medicinal agents may be a blessing, if applied with knowledge, close attention, and judgment; the use of water, harmless when judiciously used, may become dangerous when used in excess, as when people are ordered to walk barefoot in the snow.

The days of Woerishofen are numbered, although at the present moment this seems incredible. Kneipp is neither the only nor the first water swindler. Every variation of the latter has had its day and then has sunk into deserved oblivion. It may be asked, Is there nothing original in the "Kneipp cure"? Yes; running barefoot, wearing wet shirts, and other small things may pass as original, but "the good thereof is not new, and the new is not good."

Is the Kneipp cure injurious? An exact reply can not be given because the published data are inadequate. Theoretically it seems dangerous. There is nothing yet for the police to remedy. It is an evidence of retrogression, this belief that diligence and earnest study and the highest culture of human progress shall be displaced by an irrational bathing which is to cure all diseases.

It may be retorted that Kneipp surely has some decided successes What swindler can not parade such? Every shepherd claims cures of cases that have been given up by physicians. This only proves that to err is human, and that even eminent physicians may err. The quack who neither examines, nor individualizes, nor reflects, never errs. The man of science acknowledges his error; the quack never does so. If he fails, it is the fault of the patient, not of the treatment. We hear nothing of the failures of Kneipp or his followers. Is any one simple enough to believe that failures do not occur at all?

Is Kneipp a swindler and charlatan? If by this term is understood a man who for material reason falsifies the truth, the answer must be negative. Nothing is further from Parson Kneipp than the idea of enriching himself. His simple mode of life, his noble charity, his simple piety, his great love of mankind, protect him against such vile suspicion. But there are other motives that may bring a good man to charlatanism—namely, ambition and vanity—and from these qualities, which some pseudo-physicians have encouraged, Kneipp is not free. In an address which I have heard, Kneipp compared himself with the inventor of gunpowder, who, like himself, was a priest, and says he: "Since the soldier who shoots was not the inventor of gunpowder, it is not a misfortune that he (Kneipp), who is not a physician, has made a medical discovery which equals that of Schwarz." This vanity, this craving for immortality combined with a few successes, have deceived this otherwise worthy man into the belief that he is a genius. Kneipp is a phenomenon, like others; for a time he will enjoy undeserved fame; after his death nothing will remain of him but a contribution to a lapse into barbarism in the end of the nineteenth century.

In this fair and interesting manner Dr. Goldschmidt has outlined the character and work of this great empiric. Kneipp would not live in vain if he were a man who has the slightest desire to study disease or to furnish the world with the actual results of his labors. Himself imbued with that inscrutable credulity which many of his cloth encourage in their flocks (*vide* the sick throngs that visit Lourdes, and the multitudes which recently visited some relic of St. Anne in this city), he cares only for what seems to him the present good. He believes that he heals the sick, and that suffices this simple peasant priest.

The harm that may result from the Kneipp agitation lies not in the failures which must occur with or without his knowledge, but in the fatal effect which the doings of Kneipp and his followers may and probably will produce upon the progress of hydrotherapy. The history of the latter demonstrates that although water is an orthodox remedy, advocated and lauded by coryphei of medicine like Hippocrates, Galen, Celsus, and Asclepiades, whenever the empirics have trumpeted its virtues to the world physicians have abandoned its use. Whatever their motives may have been, this is a historical fact, which a few brief instances may serve to illustrate.

In the early part of the eighteenth century water had attained a prominent position as a remedial agent in England, under the advocacy of a learned physician, Dr. Floyer, whose work *Psychrolusia* passed through six editions and was translated into other languages. Great physicians, like Pitcairn, Brown, and Blair, became enthusiastic advocates of hydrotherapy. Shortly after Floyer's death, however, a clergyman, John Hancocke, announced himself as the apostle of bathing in a book, *Febrifugium magnum, or Common Water the Best Cure for Fevers*, which reached seven editions in one year. The laudatory vaporings of this empiric, however, served to estrange the medical profession from the remedy, so that Dr. George Cheyne had occasion twenty years later to deplore the neglect of baths in the treatment of disease.

Fortunately, men like Huxham, Thomas Short, and Lucas (the inventor of wet packs) espoused the cause and rescued this valuable remedy from the doom which the empiric Hancocke had unwittingly prepared for it.

In Italy, where the eminent Savonarola had established water as a remedy by his work *Tractatus de omnibus Italiæ balneis*, a priest damaged its reputation by senseless enthusiasm. Pater Bernardo, living in the island of Malta, was a prototype of Kneipp. He practised many of the same methods (walking in wet grass and upon wet stones) and attracted all Europe by his "miraculous cures." He was followed by Todano and Sangez in 1722. The former paraded as "Medicus per aquam," the latter, "Medicus per glaciem," both filling their credulous patients with ice water and rubbing them with snow and ice, while they fed them on three to four yolks of eggs a day. Water again fell into disuse among physicians, and its value ceased to be recognized until Giannini, professor in Milan, published in 1805 his work *Della natura delle febri e del migliore metodo di curarle*, in which he substituted baths of five to fifteen minutes for Currie's affusions in fevers, gout, and rheumatism. That the empirics caused an indifference to the remedial value of water to result and to continue for eighty years is evident.

In Germany the great Hufeland, following the teachings of Wright and Currie, induced many leading physicians to use cold water in acute and chronic diseases. In the typhus epidemics of 1810 to 1814 it proved so triumphant a resource that the Hufeland Society offered a prize for the best essay on the treatment of fevers by water. This prize was won by Dr. Froehlich, body physician to the Emperor of Austria. But just when hydrotherapy had reached this high position the greatest empiric the world has seen appeared. Priessnitz, a simple, ignorant peasant, as unacquainted with the literature of the subject as he was with medicine as an art, drew over fifteen hundred patients from all parts of the world—noblemen, princes, peasants, all conditions of men and women—to the inaccessible Silesian mountain village Goerbersdorf. The government built roads to the latter, and Priessnitz died in 1852 a multimillionaire.

His "marvelous cures" were spread broadcast by the numerous neurotics who frequented his establishment, just as Kneipp is heralded to-day.

Priessnitz and his adherents inveighed so bitterly against the medical profession, which had honestly but unsuccessfully criticised the heroic methods of this ignorant peasant, that physicians became antagonistic to the "water cure." This antagonism was followed by a period of indifference from which the genial and scientific Winternitz has happily rescued us. Through his labors hydrotherapy has become the common property of the medical profession. His exact methods of studying and demonstrating the rationale of the action of water may establish this remedy so firmly that the blatant vaporings of quacks may not again dislodge it. But if we regard the historical data briefly given above and reflect that each time when the empirics have driven water from its position the latter seemed to be quite as firmly established in the minds of the best physicians of their day as it is at the present time; when we further regard the fact that, by reason of the more rapid diffusion of events and incidents, the doings of the priest of Woerishofen are more largely known, his so-called cures are disseminated rapidly and widely by the lay press, which is ever ready to herald forth anything sensational, the danger which threatens hydrotherapy is more real than it seems. Numerous Kneipp cures have been established in Germany. Even physicians have "Kneipp cures" with the expectation that by lending their names and what little repute their titles may give them to this crude hydrotherapy they may add to their financial resources, losing sight of the degradation they bring upon themselves. The interest with which the reiterated laudations of sensational newspapers have invested this parson and his water cure has found an echo in this country. We already have in this city and elsewhere blatant imitators who vaunt the miraculous effects of the Kneipp "system" as a panacea. These pages would not be occupied by a reference to this subject at all had it not come to my positive knowledge that intelligent physicians in this city have permitted themselves to be gulled by these quacks, and have actually prescribed the "Kneipp cure" to be administered by these uneducated men. One prominent physician has even sent a patient to an institution for scientific water treatment in this city, *with a prescription for the Kneipp treatment.*

In view of these actual facts, I hope to do a service to the profession by reproducing Dr. Goldschmidt's fair and conclusive observations on the Kneipp cure, and thus prevent, as far as lies in my power, the sad repetition of the history of a subject which has long claimed my warmest interest, and by furthering which I hope to do a service to my colleagues and to suffering humanity.

The Index Medicus.—On lists sent to us by Dr. George Thomas Jackson since we last mentioned his subscribers we find the following names not heretofore announced by us:

Dr. W. K. Otis.
Dr. J. E. Weeks,
Dr. F. T. Brown, } (one combination subscription).
Dr. F. W. Jackson,
Dr. F. P. Kinnicutt.
Dr. J. P. Munn.
Dr. C. McBurney.

Dr. Jackson urges upon the medical profession the importance of promptly subscribing to the *Index*, so as to save it from permanent burial. The time for subscribing, he says, will expire in six weeks, and if two hundred subscribers have not then been obtained, the attempt to revive the publication will be abandoned. Dr. J. M. Winfield has kindly undertaken to try to get subscriptions in Brooklyn.

A FURTHER STUDY OF
ALOPECIA PRÆMATURA OR PRÆSENILIS,
AND ITS MOST FREQUENT CAUSE— ECZEMA SEBORRHOICUM.*

By GEORGE T. ELLIOT, M. D.,
PROFESSOR OF DERMATOLOGY
AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL, ETC.

AND A PRELIMINARY BACTERIOLOGICAL REPORT ON
ECZEMA SEBORRHOICUM:
FOR THE FIRST TIME SUCCESSFUL PRODUCTION OF THE DISEASE BY INOCULATION OF PURE CULTURES OF CERTAIN DIPLOCOCCI.

By WILLIAM H. MERRILL, M. D.,
PEPPERELL, MASS.

At the meeting of the American Dermatological Association held at New London in 1892, I read a paper on Alopecia Præmatura,† in which it was claimed that in the overwhelming majority of cases the cause of the condition was a local one, represented by various grades of that form of disease known in more recent days under the name of eczema seborrhoicum, but formerly as seborrhœa sicca, pityriasis capitis, etc. I had based my conclusions upon an analysis of two hundred and thirty-four cases treated in my private practice, of which two hundred and seven, or 88·46 per cent., had been due to one or another grade of this same local process, while the remainder—twenty-seven in number—had been the result of various general and systemic diseases and conditions. The discussion of my paper by the members present at the meeting elicited, however, views materially different from my own. Alopecia, in their opinion, was due to hereditary causes rather than to local conditions, or it proceeded from mechanical irritation, bad hygiene, or other factors of similar import. Dr. Jackson alone acknowledged a distinct causal relation between alopecia præmatura and the local affection, eczema seborrhoicum—but he qualified his acknowledgment by ascribing a greater influence to heredity than to the local disease. In view of this great divergence in opinion between myself and those members of the association who took part in the discussion, I have been led to investigate minutely each case of alopecia which has come under my care, as to the existence or non-existence in any one of them of a basis for claiming heredity as a cause. The condition of the parents' hair, whether either one of these had been or were subjects of alopecia, was rigidly inquired into, and as far as possible the cause of such loss, if existent, was ascertained.

At the same time the state of the patient's scalp at and prior to the date of consultation was investigated, and the duration of the alopecia in each was noted.

For the sake of accuracy, the material included in this paper was obtained from my private practice alone, and the cases included were those treated during the two and a half years—January 1, 1893, to July 1, 1895. Their total number was three hundred and forty-four.

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* Read before the American Dermatological Association, at Montreal, September, 1895.

† Elliot, *New York Medical Journal*, 1893.

The ætiological causes found active in the production of the alopecia were:

Alopecia areata	4
Constant headaches and neuralgia	4
Neurasthenia	4
Senile alopecia	2
Malarial and scarlet fever	2
Erysipelas	1
Diabetes	1
Pregnancy	1
Without apparent or traceable cause	5
Heredity... From mother's side, 1 From father's side, 3	4
Eczema seborrhoicum in various stages and degrees	316
	344

It was thus found that five, or 1·45 per cent., originated from unknown causes; nineteen, or 5·52 per cent., were due to general systemic disturbances; three hundred and sixteen, or 91·86 per cent., were the result of local disease; and only four, or 1·16 per cent., could be attributed directly to heredity—that is, in these four no other factor or cause existed or was present except the loss of hair at an early age in one or other of the parents, and no other cause was present in the patients themselves. If the fact alone that the parents lost their hair at an early age was entertained in investigating the ætiology and the pathological condition of a patient, then there were sixteen among the three hundred and sixteen cases which could be also included in the category of heredity. Nevertheless I have excluded these, and I believe with entire justice, for, though three of these patients had mothers whose hair was always thin and poor in quality, and thirteen had fathers bald in various degrees at early ages, yet not one of the sixteen had shown the slightest symptom of alopecia until some months or years after the development on the scalp of some one or other grade of seborrhoic eczema. It is for this reason that I have included these sixteen cases among those others due to the local process eczema seborrhoicum, and as examples of some of them I would mention:

CASE I.—A man, aged twenty-eight years, in excellent general health. Father became progressively bald from no traceable cause at the age of twenty-five years. Patient always had abundant thick hair, but alopecia had begun at the age of twenty-three years. Three years before, eczema seborrhoicum squamosum of a severe grade had developed, and when I saw him the symptoms consisted of red patches and areas covered with greasy crusts and a fatty incrustation distributed generally over the vertex; itching and burning were severe at times. Hair much thinned over affected area.

CASE II.—A woman, aged twenty-two years, delicate in health, but otherwise well. Mother's hair always scanty and thin and also grandmother's. Her own hair always scanty, but not changing at all until one year before I saw her, when the alopecia became instituted. Six months previously, pityriasis capitis had developed. When seen by me, there were red, circumscribed patches covered with greasy scales and crusts distributed over the vertex, and a pityriasic condition over the temporal and occipital regions. I would also particularly mention, in view of the patient's statements in regard to heredity as the cause of her infliction, that the mother was also seen and examined by me. She was found to have the *same* local *disease*, and to have lost the greater part of her hair after the daughter was ten years of age.

CASE III.—A man, aged thirty, in perfect functional health. Family history gouty. Father became entirely bald over vertex at a very early age, and from some undescribed cause. Patient's hair exceedingly thick and curly over the entire scalp. Pityriasis capitis for several years. Alopecia one year. Marked eczema seborrhoicum squamosum at time of consultation. Patient's wife treated also for severe alopecia. No alopecia in her family on either side, but eight months before I saw her she had had severe eczema seborrhoicum over the scalp.

Two sisters of the patient in Case III, likewise treated by me, gave the same history of father's alopecia. Both abundant and magnificent hair. Both severe grades of eczema seborrhoicum, with itching and burning for several years. Alopecia respectively eight and six months.

It certainly does not seem to me that, in view of the facts presented by these cases, any warranty exists for accusing heredity as a direct causal factor of the alopecia, and the same may be said in regard to the remaining thirteen of the sixteen referred to here, whose histories were practically identical with those already given. I assuredly do not deny that alopecia may be hereditary, but I do not believe that in cases similar to these it can be looked upon in any other way than as a predisposing factor, in so far as an individual may acquire by heredity hair poor in quantity and quality. When this is the case the effects of any disease of the scalp may be more severe, but the alopecia which takes place is certainly produced by the local affection present at the time and not by the inherited deficiency in quality or quantity of the hair. It would be as logical to postulate heredity for loss of hair after typhoid fever because the patient's father was bald at an early age as to do so in these cases, all of which were sufferers from a local process which is generally acknowledged by all writers to be a potent and frequent cause of alopecia. In order to arrive at a satisfactory conclusion in regard to this question of heredity, I found it particularly important not to be satisfied with the bare statements alone of the patient, but to investigate personally and as far as possible into the family history. As a result of doing this, the accusation of responsibility for the alopecia brought against parents was disposed of in all my cases except those already mentioned. Such conditions were frequently found as stated in the history of Case II—that is, the same local disease was present in parent and child as a cause, or the alopecia was due to some general systemic disease, condition, or dyscrasia, and post-dated the birth of the child by a number of years more or less, and not a few were fine examples of senile alopecia. In reality, I found by investigating the statements of the patients very slight basis of support for the claim of heredity, unless some such proposition was entertained as "post natal" heredity by means of which a child inherits from the parent a condition acquired by the latter years after the birth of the former—a certainly untenable proposition.

After carefully investigating, therefore, the parents' and the patients' histories, and excluding the twenty-four cases of alopecia due to some general systemic disease or condition, or which were of unknown cause, I would divide the remaining three hundred and twenty as follows: Absolutely no basis for accusing heredity as a cause, 290; heredity possible, but no alopecia until some time after the development of a local disease—eczema seborrhoicum—16; no definite information *pro* or *con* obtainable, but eczema seborrhoicum present on the patient, 10; heredity and no other factor existing, 4.

The result obtained from analyzing my cases, therefore, justifies me, I believe, in stating again that in my experience heredity as a cause of alopecia is possible and does exist, but it is exceptional and by no means the rule, as is generally believed and held.

In place of heredity it has, however, been my experience in the last two years and a half to again find that the most frequent cause of alopecia was that local disease representing some phase or grade of the process known to-day as eczema or dermatitis seborrhoica, and in view of this renewed experience I may be allowed to refer briefly to certain features presented by the affection in its relation and bearings toward the individuals affected. In my former paper I stated that two hundred and seven out of two hundred and thirty-four cases of alopecia were the result of a seborrhoic eczema of variable duration—from a few months to a number of years—that is, 88·46 per cent. were the expression of the effects of the local disease. Much as that result was surprising, in view of the opinion generally held that heredity was the prime and most frequent cause, yet to-day the percentage is still higher—91·86 per cent.—and three hundred and sixteen out of a total of three hundred and forty-four cases owe their origin and existence, in my opinion, to the local disease, and that after every other systemic, general, accidental, or other factor had been excluded by rigid investigation. It may, however, be advanced that notwithstanding the presence of the local disease it in reality had only a certain share in the production of the alopecia; there was something else—something more, something necessary for its own existence—and that it is this which is the real and important cause of the alopecia, the eczema seborrhoicum being only an accessory. There is no reason to object to the claim that there are some factors or conditions which render one individual more favorable for the development of the disease than another; there is no question but that the effects of the process may be very rapid in one, very slow in another, and nil in still another; that the affection may exist for years without producing any alopecia. There is no more doubt that these conditions exist in seborrhoic eczema than that they do in all other diseases of whatever nature, origin, or causation they may be, but they are the expression of certain unknown states of cell life; are individual in the fullest sense of the term; are usually designated as predisposition, "nature of the soil," etc., without, however, being more nearly understood or defined; and can not certainly be regarded as determining or active causes of a condition or disease, but only as favoring or nonfavoring factors, such as render the individual more or less liable or refractory to the development of a morbid process and to its effects. Consequently their interposition does not negative the claim that the active factor—the cause of the effect—is the local disease, which, it may be granted, may produce its effects easily or with difficulty, or not at all, according as the "soil" was more or less favorable. I must confess that so far as the production of alopecia by the disease eczema seborrhoicum is concerned, I could not estimate the rôle played by these possible but remote and indefinable factors. It was observed that the symptomatic evidences and effects of the disease existed irrespective of the systemic condition of the patients, was neither favored nor the opposite by any somatic state; it was seen that the alopecia persisted so long as the local process was allowed to exist, ceased with its removal, but returned with its reappearance, and under such circumstances the question certainly arises, By what should one abide? By the indefinable, remote, and unknown factors constituting predisposition, or by the objective, active, and determining cause—the local disease? That is the position in which I found myself placed after careful observation and investigation into the antecedents of my patients, the conditions existing at the time of consultation, and the effects of removing the local process; and in view of my experience I would unhesitatingly accuse some grade of eczema seborrhoicum as the direct and active cause of alopecia in the immense majority of cases.

The fact that this disease plays so important a part in the production of alopecia is of more than ordinary consequence. It is a curable and preventable process, and its more general recognition would certainly lead to a great diminution in cases of baldness. In my experience many such are directly the result of neglect, owing to a misconception of the process at work, and to the ingrained belief that heredity is the primary, secondary, and only cause of alopecia, and hence irremediable.

There is no need to refer particularly to the clinical symptoms of eczema seborrhoicum,* as they have already received full description in other papers on the subject, and to do so would only involve repetition. I would rather call brief attention to some other features obtained from the present analysis of my cases, and then to take up the perhaps most important part of my paper.

The proportion in regard to sex is practically the same as previously found by me. There were then 55+ per cent. females and 44+ per cent. males, while now there are 64+ per cent. females and 35+ per cent. males. In other

Table of Ages.

1 to 10 years	1	2	3
10 to 20 "	11	31	42
20 to 30 "	59	99	158
30 to 40 "	31	44	75
40 to 50 "	8	21	29
50 to 60 "	1	8	9
	111	205	316

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* Elliot. Eczema Seborrhoicum, *N. Y. Med. Jour.*, 1891. Alopecia Præmatura, etc., *N. Y. Med. Jour.*, 1893. Article, Dermatitis Seborrhoica, Morrow's *System of Genito-urinary Diseases, Syphilis, and Dermatology.*

words, there is a decided preponderance in number in favor of the female sex, one, however, not to be taken as absolute, but as entirely relative, owing to the fact that women seek aid for their afflictions much oftener than men.

According to the table of ages, I may say that my former statements are substantiated by it, since the largest number of cases occurred in the decade twenty to thirty, and the next largest in the ten years thirty to forty. In 1892, 47 + per cent. occurred in the former and 31 + per cent. in the latter, while now the proportion is 50 per cent. and 23 per cent. respectively. More important, however, is the fact that two hundred and three cases, or 64 + per cent. of the whole, occurred before the age of thirty, or within those years in which alopecia may certainly be called premature, and also at a time when systemic and bodily health is at its best, and has not yet been taxed and strained to its utmost by the mode, conditions, and struggles of life. In other words, at the period of life when the recuperative powers of the body are most active, when the presence of systemic conditions sapping strength and nutrition are to the greatest extent wanting, it is then that the alopecia is most frequently initiated and sustained, instead of its having its origin later in life, when so many concomitant bodily factors may be present as adjuvants and aiders in the process. This seems to me to be certainly an additional argument in favor of the decisive influence of the local disease, as against those other remote and undemonstrable predisposing factors which are spoken of but not described, and I may also add that, in my cases at least, the condition of systemic health could not be appealed to as exerting any effect in the production of the loss of hair.

Of my patients, seventy-two per cent. were in good general and functional health, while the remainder furnished details pointing to gastric or intestinal dyspepsia of varying degree, to constipation, anæmia, rheumatism, gout, or some slight ailment of imagination or of fact, such as may and does occur in connection with any skin disease. None, however, were in such condition as would preclude their coming to my office, or were in reality what might be called ill.

After reviewing carefully all my cases, after analyzing them with all possible rigidity, and after weighing all the *pros* and *cons* of the question during the last two years and a half, I am therefore compelled to repeat emphatically the assertion made by me in 1892—viz., that a local disease, eczema seborrhoicum, is in the overwhelming majority of cases the cause of alopecia.

The object of my paper was not, however, alone the reinvestigation of the causation of alopecia, but more particularly was it intended to bring forward a question in the pathology of eczema seborrhoicum, one of the very highest importance, and one to which attention is more particularly asked than to any other part of the subject.

Some years ago I had the pleasure of arousing interest in the question of seborrhoic eczema in the mind of my friend Dr. William H. Merrill, of Pepperell, Mass., and for several years he has devoted himself, as far as his time permitted, to the study of the bacteriology of the disease. The practical results of his work he has communicated to me from time to time, but, thinking that this was a fitting occasion for making his work and its results public, he has at my request kindly sent me the following preliminary report of his experiments and investigations:

BACTERIOLOGICAL STUDY OF ECZEMA SEBORRHOICUM, ETC.

BY WILLIAM H. MERRILL, M. D., PEPPERELL, MASS.

The material used for the bacteriological experiments was taken from the scalps or faces of patients presenting all the necessary symptoms of seborrhoic eczema. The cases utilized were fifty in number, and in forty-eight of these germ life of some kind was found. Two (Cases VI and VII, author's notebook) were sterile, it being impossible to obtain any growth from the scales by any method, and it is a most interesting fact to note that on the day previous to the collection of the material from both of these cases the eruption had been freely bathed with a solution of resorcin.

Of the forty-eight, only two (Cases III and XXXI, author) showed any growth in bouillon. In Case III it was produced by a large motile bacillus (not examined); in Case XXXI, by the *Staphylococcus pyogenes aureus*. In gelatin media, or in gelatin stiffened with agar, growth of some kind was invariably obtained.

In thirty-four cases the gelatin was liquefied to a greater or lesser degree, in fourteen it was not. In these latter the growths appeared only about the surface scales; but those thrust below the surface showed no development unless air gained free access to them through the needle puncture.

The cultures were always kept at ordinary room temperature. Of four cases examined in February the inoculated tubes were allowed to stand at night in a cold room (32° F.), and they remained sterile until the tenth day. Tubes inoculated in summer, however, would show a visible growth on the third day. On the fourth day (70° F.) signs of germination could generally be seen, and the time in the cases in which it began varied from the third to the sixth day after inoculation. Freezing temperatures were found to undoubtedly retard to a considerable degree the artificial growth of the germs occurring in eczema seborrhoicum. Pure cultures obtained from the experiments showed three distinct varieties of bacteria, which may be designated as Nos. 1, 2, and 3. In thirty-one cases all three were present; in seven, only Nos. 1 and 2; in two, Nos. 1 and 3; in five, No. 1; and in one, No. 3 alone. In two cases (IX and XI, author's notebook) all three were present, and also a few colonies of the motile chromogenic *Bacillus fluorescens liquefaciens minutissimus* described by Unna and Tommasoli (Sternberg).

Variety I.—Small diplococci, single or in irregular groups. The parts forming each diplococcus are round or only slightly oval. The germs are aerobic, non-liquefying, and non-chromogenic. At 70° F. they grow rapidly. On gelatin plates the deep-seated colonies remain about the size of an ordinary pin's head for weeks. The superficial colonies are round, white, with slightly raised surfaces, and smooth or somewhat irregular borders. In its growth the colony adheres very nearly to its circular form. After the first week the centre begins to turn darker, and with increasing age of the colony the whole surface, hitherto smooth, begins to be wrinkled and the edges become irregular, as though the evaporation of the water caused contraction. At the end of three weeks growth seems to stop, and the colony changes from its original white color to a dusky brown.

On agar-agar the appearances closely resemble those of the gelatin colonies, except that it is slower in its growth and its surface has a whiter lustre. On potato the growth begins to be visible on the second day. On the fifth day it is cream white, smooth, raised about a tenth of an inch, and its edges are irregular and scalloped. At this time it covers about two thirds of the surface of a potato stick half an inch in diameter. After the first week the growth is slow and at the age of three weeks its size only equals that of the first week, but the colony itself is shriveled, dried, and dark in color.

In milk the culture had on the second day a slight greenish tinge, which by the fifth day had disappeared. The upper quarter inch of the milk seems slightly thicker, but no other change is visible to the naked eye.

Variety II.—In appearance it is almost identical with Variety I, except that it seems more oval in form. This diplococcus is aerobic, non-liquefying, and chromogenic. As in Variety I, the ordinary changes of temperature, as occur from the rotation of the seasons of the year, retard or accelerate the growth of the cultures. On *Petri dishes* of *gelatin*, the minute, round, yellow colonies appear on the third or the fourth day. Those on the surface grow slowly, are slightly raised, and have smooth borders. After the first week's growth the centre shows a deeper orange color.

On *agar-agar*, the growth is slightly lustrous, thicker, and of a light orange color.

On *potato*, a deep golden layer develops, which is well raised and has irregular borders.

In *milk*, this diplococcus grows as Variety I does, except that after ten days the upper layer of the milk is thickened and has turned the same golden color mentioned.

In *stab* cultures of Varieties I and II the growth adheres pretty closely to the puncture line, gradually spreading down it and over the surface.

Variety III.—A bacillus with rounded ends, single, in pairs, or in short or long chains. It is aerobic and anaerobic, motile, liquefying, and non chromogenic.

In gelatin tubes, a grayish-white growth commences on the second day. In smear cultures, a pit of liquefied gelatin is formed, and, remaining of the same irregular shape as the smear, it gradually deepens and contains at the bottom a whitish sediment.

In stab cultures the resulting pit is the shape of the puncture and contains the same white sediment.

On agar-agar the growth is whitish, its surface raised, without lustre, and its border indented.

Dr. Unna has described three varieties of diplococci as present on the skin of patients suffering from eczema seborrhoicum (Sternberg). They all differ somewhat from the two varieties described here. Unna's two first are liquefying diplococci, while Nos. I and II are non-liquefying—a fundamental difference. His third variety, the *Diplococcus albicans tardus*, resembles No. II somewhat, but in certain aspects of its growth on the various culture media it differs decidedly. In addition to the diplococci, he has also described four varieties of bacilli as being often present in the disease. No. III seems to differ from them all. It resembles most closely the *Bacillus fluorescens liquefaciens*, being, however, larger and non-chromogenic. These differences are enough to warrant separate classification.

Inoculation experiments were attempted in twelve cases. The site of inoculation chosen was the hairy scalp, or over the sternum.

After thoroughly sterilizing the skin, two or three hairs were pulled out and the skin slightly abraded, as in vaccination; portions of an actively growing culture were then rubbed in with a sterilized platinum needle.

With No. III two attempts were made and both failed.

With No. I five attempts were made. Of these, one was a failure. In the four others the edges of the inoculation spots began to grow slightly reddened from the fourth to the sixth day, and small scales formed on the surface. By the seventh to the tenth day the spots had increased in size and were covered with dry white scales. Scales taken from these spots and placed in suitable culture media in each case gave rise to pure cultures of diplococcus No. I.

Variety No. II was used once. On the sixth day yellowish scales appeared over the surface. They grew slightly more marked on the tenth day, and the lesion then closely resembled certain typical forms of seborrhoic eczema. Diplococcus No. II was found in the cultivations from these scales.

The last four inoculations were made with both No. I and No. II. Of these, one was a failure. Another showed a small spot covered with a few branny scales, too small to allow of any conclusions being drawn. In the other two a change began on the fourth day. The bases began to redden, and typical crumbly, greasy scales began to cover the surfaces and pile up in the centres. On the eighth day the spots were an eighth of an inch across and represented patches of seborrhoic eczema. Both Nos. I and II could be cultivated from these scales.

It is possible that Variety No. II may have given the yellow color to these scales, as it was absent in the successful cases using No. I.

The result of the twelve inoculation experiments, therefore, are: Five failures. Seven cases in which definite lesions were produced.

The percentage of successes is certainly large enough to show that either No. I or No. II, or both, bear some definite causative relation to the disease, but the number of cases is too small and the experiments too incomplete to draw any general conclusions. Certain probabilities may, however, be fairly deduced:

1. That eczema seborrhoicum is caused by a specific germ or germs.

2. That this germ is a diplococcus, or that they are diplococci.

3. That the yellow color often seen in the eruption is due to the chromogenic faculty of a germ.

4. That the wide prevalence of the disease is due to the ability of these germs to develop at the ordinary temperatures of the varying seasons of the year.

According to Dr. Merrill's report, we thus see that following the necessary steps and observing the prime requirements by which it may be judged whether micro-organisms found in a disease are pathogenic *per se*, and pathogenic in connection with the disease from which they were obtained, he determined:

1. The constant presence of certain micro-organisms in all cases of the disease examined, except in two, and in these the negative result was in all probability due to the factor he mentioned—the prior use of resorcin.

2. He cultivated these germs upon various media and obtained each in a state of pure culture.

3. He made inoculations with these pure cultures, and with two of them (Nos. I and II), singly and together, he produced lesions characteristic of the disease.

4. From the lesions produced he reobtained pure cultures of the germs.

I believe that these are the crucial tests for determining the pathogenetic influence of micro-organisms *per se* and in the production of a disease, and I think, therefore, that Dr. Merrill's work is of the very greatest importance and worthy of the highest consideration.

There were only seven out of twelve inoculations, however, which were successful, and it may in consequence be maintained that his experiments were not so very decisive, or there would have been uniform results. That would appear to me, however, to be hypercriticism, as positive and negative results occur in every series of experiments in which inoculations of bacteria are made, the one inoculated being refractory or immune, or the surface not at the time in a condition suitable for reaction toward the pathogenic element. Such states are allowed and claimed for diseases in general and of all kinds, and I do not see, therefore, why the same claim can not be postulated in seborrhoic eczema.

To myself personally the results of Dr. Merrill's work are particularly gratifying, as they corroborate so decidedly clinical observation. I have in every paper on the subject asserted my belief in the bacterial origin of the disease, basing my opinions, however, only upon clinical facts relating to its development, course, and general behavior, and especially upon the many apparently conclusive demonstrations of its contagiousness. This latter, as mentioned in my previous paper, was shown by its evident transmission from one person to another by means of direct contact in family life, by the use of hair brushes, etc., and the suggestion entertained upon these grounds that the disease was a parasitic and contagious one was, moreover, very decidedly strengthened in the last two years and a half by the clinical fact that a hundred and forty-seven of my three hundred and sixteen cases occurred in several or more individuals in families. From two to six persons in the same family have been treated by me, all having the same disease, and it was repeatedly possible to trace the transmission of the process from one member to another. Of course, such evidence was only suggestive, not conclusive, and positive proof of the parasitic nature of the disease had to wait until such work had been done as is contained in Dr. Merrill's paper and a definite micro-organism had been isolated. He has unquestionably demonstrated that the disease is a parasitic one, and he is the first who has by inoculation of pure cultures of his diplococci produced lesions characteristic of those seen clinically in eczema seborrhoicum.* Unna himself by his inoculations only produced vesicles on human subjects and redness with alopecia on rabbits, but no lesions distinctly those of the disease in question.

There is in Dr. Merrill's investigations one peculiarly interesting fact brought out by the inoculations, and shown in the difference of lesion produced according to the variety of diplococcus made use of. For instance, when No. I (a *non-chromogenic diplococcus*) was inoculated, a lesion having only dry, white pityriasic scales resulted. When No. II (a *chromogenic diplococcus*) was used, then the scales were yellowish and greasy. When both I and II were inoculated together, greasy, crumbly, yellow crusts were formed. These results are most certainly particularly suggestive when it is considered that precisely similar clinical phenomena are daily seen representing the disease, and they lead to the idea that the clinical differences presented by the lesions occurring in eczema seborrhoicum are probably due to the presence of diplococcus I alone or of diplococcus II alone, or of both at the same time. The question is of great importance and will undoubtedly be solved later on. Dr. Merrill's report is only a preliminary one, and after further work he may be able to settle definitely that point and many others which are of importance in the disease.

The demonstration that the affection is a parasitic one and inoculable will also hasten the recognition of the true pathological nature of those phases of cutaneous disease which make up the process eczema seborrhoicum. Previous to Hebra they were regarded as inflammatory in nature, but he swept them all into the category of disturbances in secretion of the sebaceous glands, and to them and other clinical phenomena he gave the name of seborrhœa sicca. This has been their position ever since, and only after Unna's first attack upon their misconceived pathological position has a conception of their real nature begun to make headway. He first pointed out that they were primarily inflammatory and not functional disorders in the quality of the secretion of the sebaceous glands, and subsequently in this country I have demonstrated that the various phases studied by me belonged absolutely in the class of inflammations. Now that micro-organisms have been found which produce, when inoculated, the clinical phenomena of "seborrhœa sicca," it is probable that the disputed nature of the disease may finally be settled and properly understood.

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* In a letter to me Dr. Merrill has further stated: 1. That he did not obtain any of Malassez's flask bacilli in his experiments. 2. He also produced the lesions over the sternum by using cultures of his diplococci obtained from the scalp. 3. All successful inoculations on the scalp were accompanied by alopecia over the affected area.

The conclusions which I would make from the present series of cases of alopecia præmatura are not different from those made by me in 1892:

1. Heredity may be a cause of alopecia, but is an exceptional one.

2. Its most frequent cause is some form or grade of eczema seborrhoicum.

To these I would add:

3. That this disease, suspected and alleged to be parasitic in nature, has been demonstrated to be so in reality by Dr. Merrill's experiments and successful inoculations.

14 West Thirty-third Street.

REPORT OF A CASE OF
CAVERNOUS ANGEIOMA OF THE TONGUE.

By VARD H. HULEN, M. D.,
HOUSE SURGEON TO THE NEW YORK EYE AND EAR INFIRMARY.

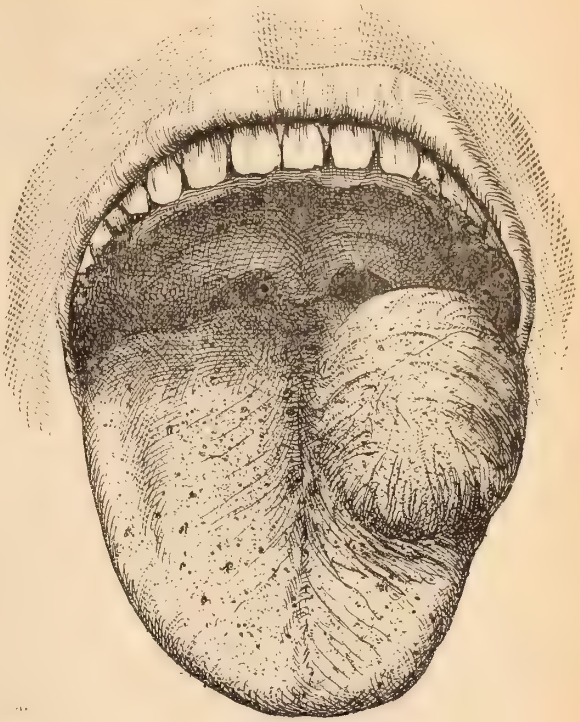
Vascular tumors of the tongue are of rare occurrence. Some of the recent extensive treatises on surgery do not mention the occurrence of angeioma of the tongue, others state that the tongue is rarely affected by vascular tumors. Henry T. Butlin, F. R. C. S., in his treatise on *Diseases of the Tongue*, writes that venous angeiomata are not uncommon, though seldom larger than a "large nut." Unfortunately, he leaves one in doubt as to whether he refers to a hazelnut or a cocoanut.

In a careful search of the literature bearing on this subject the reports of but thirty-two cases of angeiomata of the tongue were found: eleven cases were reported in France, nine in England, seven in the United States, two in Germany, one each in Spain, the Argentine Republic, and India.

Susan C. presented herself at the New York Eye and Ear Infirmary September 10, 1895, and was assigned to the service of Dr. Frank L. Ives, through whose kindness this case is reported. She states that she was born in Ireland forty-three years ago, and has been a resident of New York city for thirty years. Is married, but was never pregnant. Has always been in good health, excepting occasional attacks of malaria. Her father died of kidney disease at the age of seventy-five years; mother died of general debility when sixty years old; has two brothers now living and in good health, aged thirty-nine and forty years respectively. Her only sister died at the age of seventeen from typho-malarial fever. No history is given of growths or tumors or anything of the kind in the family.

She comes on account of a tumor on her tongue which she says has been present for twenty years; she does not know how much longer it has existed, for it was discovered accidentally by her family physician when attending her for chills and fever. The tumor has always been just as it is at present so far as the patient can tell, and has not given any trouble except causing a slight impediment in her speech. She was advised to come for treatment by her dentist, who last July extracted her teeth and now finds it impossible to fit her with artificial teeth on account of the presence of this tumor.

The growth is situated on the left side, three centimetres from the tip of the tongue; it is of a bluish aspect, almost globular in form, with rugæ at the outer side running vertically; several small "knots" are noticed on its lower surface. The tumor is soft and spongy in character, partly emptied by pressure and quickly refilling when the pressure is removed; no thrill and no pulsation. When the tongue is protruded the tumor measures 3·4 centimetres antero-posteriorly, 3·2 centimetres transversely, and 3·5 centimetres vertically. The accompanying cut shows the position and general appearance of the neoplasm. Unfortunately, no line of treatment could be carried out in this case, for the patient has so far not returned to the infirmary.



AN UNDESCRIBED SYMPTOM OF PYOSALPINX;

WITH REPORT OF CASES.

By WILLIAM C. WOOD, M. D.,
GYNÆCOLOGIST TO NATHAN LITTAUER HOSPITAL, GLOVERSVILLE, N. Y.

In every case of salpingitis coming under my observation the patient has complained of a severe pain over the region of the liver, so severe in some cases as to lead to serious questioning on the part of the patient and her friends, and in one case on the part of counsel, as to the correctness of my diagnosis.

I have never met with a mention of this pain in any text-book, yet its constancy seems to be more than a coincidence. It is due, I believe, to reflex action resulting from pressure upon the pelvic nerves.

Case I.—In the first observed case a gonorrhœa was followed by a sharp attack of pelvic peritonitis; the left tube was distended until it seemed like a small sausage; the patient complained bitterly of a pain in the region of the liver and lower pleural region, and insisted that it was not across her, but in her side, that the disease lay. After about ten days she had a profuse purulent discharge from the uterus, the tumor subsided, and the liver pain ceased.

She has not since (two years) had another severe attack, but suffers from menstrual disturbances, backache, and pain in the left ovarian region, refusing treatment because "she don't want to have any one talk operation."

Case II.—In this case, also gonorrhœal, the patient suffered from a similar severe pain over the liver, with sausage-shaped tumor in the left ovarian region.

On opening the abdomen I found a small abscess of the ovary and pus tube on the left side which I removed. The right tube and ovary were not touched, and the patient made a good recovery with cessation of liver pain.

Case III.—Pelvic abscess on the right side, tubal inflammation with pus on the left side; liver pain present but not so severe, or rather, the pelvic pain being greater, there was not so marked a distinction.

I removed the left ovary and tube and the *débris* of the right, drained the pelvis through the vagina, and my patient made an excellent recovery.

Case IV.—Pyosalpinx and parovarian cysts; liver pain first drew my attention to the condition of the pelvis. I removed both ovaries, got a good recovery, and the liver pain ceased.

This patient was of a consumptive family and now phthisis is developing. If it had not been for the other cases I might have suspected pleural trouble.

Case V.—Gonorrhœal pyosalpinx and cysts of the parovarium; liver pain prominent. I found, upon operation, both tubes wrapped about the uterus and adherent to the uterus, to the rectum, and each other; recovery prompt.

Case VI was that of a patient operated on by another surgeon for hydrosalpinx, the left tube alone being removed. I was present at the operation, and after her convalescence the patient was placed in my care. She has lately—six months after the operation—begun to complain of liver pain, and I fear will have trouble with the remaining ovary.

I have now in the hospital a patient with pyosalpinx upon whom I shall operate, who is to-day suffering with pain just under the ribs.

The foregoing are illustrative cases. I have seen a number of others in which this pain was the subject of complaint, and for which anodynes were required when the pelvic pain was well borne. In some of them the diagnosis was confirmed by operation, in others no operation was performed.

It may be the symptom is new only to myself, or it possesses too little importance to be worth mentioning in the text books of gynæcology, yet its regular appearance in each of my cases leads me to report it.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 22, 1895:

DISEASES.	Week ending Oct. 15.		Week ending Oct. 22.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	36	7	62	9
Scarlet fever	39	0	36	3
Cerebro-spinal meningitis	2	2	1	1
Measles	43	2	52	5
Diphtheria	139	19	162	20
Small-pox	0	1	1	0
Tuberculosis	68	102	115	116

THE
NEW YORK MEDICAL JOURNAL,
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NEW YORK, SATURDAY, OCTOBER 26, 1895.

A NEW VIEW OF THE TREATMENT OF VOMITING AFTER CHLOROFORM ANÆSTHESIA.

In the *Revue de chirurgie* for September M. Lewin relates his experience with the use of vinegar to prevent vomiting in a hundred and seventy-four cases of chloroform anæsthesia. In a hundred and twenty-five cases, he says, he has obtained complete success, no vomiting of any kind having been produced. In forty-nine cases there was vomiting, but it was generally slight and the rejected material was rather viscous. The method should be very carefully carried out, he says, in order to insure good results. It is known, he remarks, that chloroform is eliminated almost exclusively through the lungs, partly as free chloroform and partly as formic acid and chlorine. It is evident, he says, that the chlorine exercises an irritating action on the larynx and on the trachea, and that this is one of the principal causes of the vomiting. When a cloth saturated with vinegar is held over the nostrils, the chlorine combines with the acetic acid as fast as it is evolved, and forms trichloracetic acid.

It is very dangerous to use pure chloroform, says M. Lewin, and all medicinal chloroform should contain a certain quantity of alcohol, which renders its decomposition during narcosis more difficult. It is also known, he continues, that chloroform dehydrates the tissues, and consequently after the action of the chloroform has been suspended it is well to make the patient breathe in air that is as humid as possible. This dehydrating action, says the author, influences also the endothelium of the blood-vessels and causes coagulation of the blood, to which the slackening of the circulatory movement and the feeble activity of the chemico-biological phenomena in the capillaries also contribute. Under such circumstances, the author thinks, acetic acid is a powerful factor in restoring to the blood its normal fluidity, owing to a property that it derives from the water it contains, and to its energetic power of destroying the fibrin. Moreover, acids in general are stimulants of the respiratory tract. The foregoing considerations, he says, seem to him sufficient to explain the phenomena without bringing forward a hypothetical action of the vinegar, or of acids in general, on the vomiting centre by the intervention of the vaso-motor nerves.

The following observations were made in cases where this treatment was employed by the author. Immediately after the application of the vinegar the pulse became strong, respiration grew deeper, the face regained a little color, and the corneal conjunctiva became bright. The appetite returned at the end of a short time, and the patients occasionally complained of hunger on the very day of the operation. Frequently they did not suffer at all from the general uneasiness which nearly always follows chloroform anæsthesia. It does not follow from this, says M. Lewin, that the application of the vinegar always suppresses the vomiting, for, in certain cases where the patients are very nervous or are suffering from certain affections of the lungs or of the stomach, vomiting may occur in spite of the treatment.

The method of application is as follows: A piece of linen of about the size of a napkin is saturated with vinegar and lightly wrung out; it is then placed on the patient's face, over the mask, which is afterward carefully withdrawn, care being taken not to allow the air to gain access to the face too suddenly, for it ought to pass through the linen cloth before being inhaled. This cloth must be kept on as long as possible, for three hours at the least, and it is better for the patient if the application is prolonged during the entire day, for occasionally the presence of chloroform in the expired air has been observed for more than two days after narcosis. If the cloth is removed too soon, nausea will set in. If the linen cloth dries very rapidly, it must be replaced immediately with a fresh one, which is put over the first cloth before the latter is drawn away in order to prevent the air from touching the face. If the wet cloth is annoying to the patient, it may be held away from the face with a mask. It is of the greatest importance to conform to these rules, says M. Lewin, for failure to observe them has prevented good results from following the application of the vinegar. In administering chloroform, he says, it is preferable to use small doses, which is the only rational method, for in operating the mask should not be raised during chloroformization, while by the method of large doses it is often necessary to lift the mask after having produced a profound narcosis. In this way the air reaches the patient's face too suddenly and causes nausea and vomiting, sometimes during the operation sometimes after it.

MINOR PARAGRAPHS.

THE *ARCHIVES OF PÆDIATRICS.*

It is announced that this excellent periodical, beginning with the number for January, 1896, will enter upon its thirteenth year with Mr. E. B. Treat as its publisher, who intends to increase the amount of its reading matter and enlarge its scope. It will continue to be edited by Dr. Floyd M. Crandall, of whose judicious management of it heretofore we have already taken occasion to speak.

THE CASE OF SURGEON KERSHNER, OF THE NAVY.

A most pernicious Washington dispatch printed in the *New York Tribune* early in the week makes its proper for us to allude again to the case of Surgeon Kershner. The President has not yet passed upon the court's finding, and the dispatch is apparently intended to gall him into approving of it on pain of being thought to have remitted the sentence out of resentment toward Admiral Meade, Dr. Kershner's accuser. We feel that the *Tribune* would shrink from taking this position editorially, and we believe that Mr. Cleveland is far beyond the reach of any such cajolery as seems to lurk in the dispatch. For the good of the service, we hope to see the court's conclusion disapproved of.

ITEMS, ETC.

The County Medical Association and the Reorganization of the Medical Boards of the City Hospitals.—At a meeting of the New York County Medical Association held on Monday, the 21st inst., the following preamble and resolutions were adopted:

Whereas, Information comes to us from reliable sources that the medical boards of the Gouverneur, Fordham, City, Maternity, Nervous Diseases, Workhouse, Almshouse, and Randall's Island Hospitals have been abolished, to take place on November 1st, and that the members composing said boards are to be removed without cause; and,

Whereas, In the case of the Harlem Hospital the committee of the New York County Medical Association appointed to consider matters of interest to the medical profession asked for a hearing before the Commissioners of Public Charities and Correction, in the interest of the medical men who had been unjustly deposed, and urged upon the appointing boards of the medical colleges that they defer action until charges had been preferred, or that, in the absence of charges, they be reappointed; and,

Whereas, The medical colleges and the commissioners ignored the communications, and thereby expressed their apparent contempt for your representatives and their indifference to any wrong done to the profession. Therefore, be it

Resolved, That this association condemns the wholesale dismissal of medical men from hospital positions without cause or hearing.

Resolved, That we express our disapproval of the action of the faculties of the four divisions of Bellevue Hospital and Commissioners of Public Charities and Correction in ignoring the communications of your committee.

Resolved, That copies of the preamble and resolutions be forwarded to the faculties of the Medical Department of the University of the City of New York, the Bellevue Hospital Medical College, and the College of Physicians and Surgeons, to the Commissioners of Public Charities and Correction, and to the medical press.

The New Haven, Conn., County Medical Society.—At the semi-annual meeting, held in Meriden on Thursday of last week, officers were elected as follows: President, Dr. Gustavus Eliot, of New Haven; vice-president, Dr. C. S. Rodman, of Waterbury; clerk, Dr. J. H. Townsend, of New Haven. According to the *New Haven Evening Register*, the following preambles and resolutions were adopted:

Whereas, In consequence of the fact that large numbers of graduates of colleges which are recognized in this State as legal and reputable are being rejected by examining boards in other States, where the possession of such diploma is not sufficient in itself to entitle the holder thereof to practise, and

Whereas, As a consequence of the foregoing facts this State has become the dumping ground of undesirable practitioners from other States, and

Whereas, In our opinion it behooves the State for its own protection to guard against such an invasion, it is

Resolved by the New Haven County Medical Society that the attention of the other counties and the various State medical societies and the various committees on legal and reputable colleges be called to this state of affairs, and that (pending legislative action) the latter be requested to so revise such lists as to limit according to their judgment the numbers of those entitled to practise simply upon registration without examination.

Resolved, That the State committee on legislation be instructed to advocate the amendment of the law so that all candidates for registration be requested [required?] to pass an examination as in New York, Pennsylvania, and other States.

The Late Dr. Frederick M. Warner.—At a special meeting of the Medical Board of the City Hospital held at the Academy of Medicine on October 21, 1895, the following resolutions were adopted:

Whereas, It has pleased God to remove our late colleague, Frederick M. Warner, M. D., from his field of labor in the City Hospital; and

Whereas, He was by temperament, experience, and education thoroughly equipped for the alleviation of human sufferings in the City Hospital, where he labored zealously and conscientiously for several years.

Resolved, That we, his late colleagues, express our sincere admiration of him as an associate and our profound regret that his future—so full of brightness and promise—should be lost by death.

Resolved, That we tender his family our deep sympathy with them in their bereavement, and that a memorial page be set apart in our book of minutes.

Resolved, That an engrossed copy of these resolutions be sent his family.

J. Blake White,
[Signed.] Thomas H. Allen, } *Committee.*
Simon J. Walsh,

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 29 to October 19, 1895:*

Billings, John S., Lieutenant Colonel and Deputy Surgeon General, having served over thirty years in the army, is, on his own application and by direction of the President, retired from active service, October 1, 1895.

Birmingham, Henry P., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect upon the arrival of Bushnell, George E., Captain and Assistant Surgeon, at Fort Trumbull, Conn. Captain Bushnell will proceed to Fort Trumbull and report for temporary duty during the absence, on leave, of Captain Birmingham.

Edie, Guy L., Captain and Assistant Surgeon, is relieved from duty as assistant to the attending surgeon in the city of Washington, D. C.

Gibson, Joseph R., Lieutenant Colonel and Deputy Surgeon General, will report in person to the president of the Army Retiring Board at Washington Barracks, D. C., at such time as he may designate, for examination by the board.

Matthews, Washington, Major and Surgeon, having been found incapacitated for active service by an army retiring board on account of disability incident to the service, is, by direction of the President, retired from active service on September 26, 1895.

Meriwether, Frank T., First Lieutenant and Assistant Surgeon, having been found incapacitated by an army retiring board on account of disability incident to the service, is, by direction of the President, retired from active service this date.

Quinton, William W., First Lieutenant and Assistant Surgeon, will be relieved from temporary duty at Fort Logan, Colorado, to take effect upon the arrival there of Johnson, W. W., Captain and Assistant Surgeon, and ordered to Fort Riley, Kansas, for duty.

Raymond, Thomas U., Captain and Assistant Surgeon, is granted leave of absence for four months, to take effect about November 5, 1895.

Reynolds, Frederick P., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Sam Houston, Texas, and ordered to Fort Clark, Texas, for duty, relieving TenEyck, Benjamin L., Captain and Assistant Surgeon. Captain TenEyck, on being thus relieved, is ordered to Columbus Barracks, Ohio, for duty.

Swift, Eugene L., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect when his services can be spared, with permission to apply for an extension of one month.

Ware, Isaac P., First Lieutenant and Assistant Surgeon, is granted leave of absence for one month on surgeon's certificate of disability, with permission to leave the limits of the department.

Cabell, Julian M., Captain and Assistant Surgeon, is ordered to David's Island, N. Y., for duty, in lieu of reporting to the Surgeon General for duty.

Cronkhite, Henry M., Major and Surgeon, having been found incapacitated for active service, is retired, to date from September 17, 1895.

Kulp, John S., First Lieutenant and Assistant Surgeon, is granted leave of absence for one month, to take effect about November 10, 1895, with permission to apply to the Adjutant General of the Army for an extension of one month.

Pope, B. F., Major and Surgeon, is granted leave of absence for thirty days.

Promotions.

Crampton, Louis W., Captain and Assistant Surgeon, promoted to be surgeon with the rank of major, September 6, 1895.

Gardner, Edwin F., Captain and Assistant Surgeon, to be Surgeon with the rank of Major, October 1, 1895.

Tesson, Louis S., Captain and Assistant Surgeon, to be Surgeon with the rank of Major, September 26, 1895.

Waters, William E., Major and Surgeon, to be Deputy Surgeon General with the rank of Lieutenant Colonel, October 1, 1895.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Fifteen days ending October 15, 1895:*

Murray, R. D., Surgeon. Granted leave of absence for thirty days. October 4, 1895.

Irwin, Fairfax, Surgeon. Granted leave of absence for thirty days. October 4, 1895.

Banks, C. E., Passed Assistant Surgeon. Detailed as chairman of board for physical examination of officers and candidates for the Revenue-Cutter Service. October 2 and 8, 1895.

Brooks, S. D., Passed Assistant Surgeon. When relieved from temporary duty at St. Louis, Mo., to rejoin station at Chicago, Ill. October 3, 1895.

Williams, L. L., Passed Assistant Surgeon. To proceed from Charleston, S. C., to Waynesville, Ga., as inspector. October 2, 1895.

Magruder, G. M., Passed Assistant Surgeon. Upon completion of duties at Camp Jenner, Eagle Pass, Texas, to rejoin station at Galveston, Texas. October 11, 1895.

Cobb, J. O., Passed Assistant Surgeon. To proceed to Victoria, B. C., and Vancouver, Wash., on special temporary duty. October 12, 1895.

Brown, B. W., Passed Assistant Surgeon. Detailed as recorder of boards for physical examination of officers and candidates for the Revenue-Cutter Service. October 2 and 8, 1895.

Houghton, E. R., Passed Assistant Surgeon. Granted leave of absence for thirty days from date of being relieved from duty at Vineyard Haven, Mass. October 5, 1895.

Prochazka, Emil, Assistant Surgeon. When relieved from temporary duty at Charleston, S. C., to proceed to Cairo, Ill., for temporary duty. October 12, 1895.

Thomas, A. R., Assistant Surgeon. Relieved from temporary duty at New Orleans, La., and directed to rejoin station at St. Louis, Mo. October 3, 1895.

Greene, J. B., Assistant Surgeon. Relieved from temporary duty at Wilmington, N. C., and directed to proceed to Vineyard Haven, Mass., and assume temporary command of the service. October 2, 1895.

Resignation.

Houghton, E. R., Passed Assistant Surgeon. Resignation accepted, to take effect upon expiration of leave of absence. October 5, 1895.

Society Meetings for the Coming Week:

Monday, *October 28th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; College of Physicians of Philadelphia (Section in Orthopædic Surgery); Baltimore Medical Association.

Tuesday, *October 29th:* Medical Societies of the Counties of Queens (semi-annual—Garden City) and Rockland (semi-annual), N. Y.; Boston Society of Medical Sciences (private).

Wednesday, *October 30th:* Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Gloucester, N. J., County Medical Society (quarterly); Middlesex, Mass., North District Medical Society (Lowell).

Thursday, *October 31st:* Massachusetts Medical Benevolent Society (annual—Boston), Mass.

Friday, *November 1st:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *November 2d:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society, New York (private); Miller's River, Mass., Medical Society.

Births, Marriages, and Deaths.

Born.

Milliken.—In New York, on Monday, October 21st, to Dr. and Mrs. Samuel E. Milliken, a son.

Married.

Alward—Eaton.—In Buffalo, on Thursday, October 10th, Mr. Charles Francis Alward and Miss Leetta Eaton, daughter of Dr. Louis Eaton.

Belle—Chevalley.—In Biloxi, Miss., on Tuesday, October 8th, Dr. George S. Belle and Miss N. Chevalley, both of New Orleans.

Dana—Upham.—In New York, on Thursday, October 10th, Mr. Richard Dana, of Boston, and Miss Rosamond Upham, daughter of Dr. J. B. Upham, of New York.

Elmendorf—Peck.—In Buffalo, on Thursday, October 17th, Dr. William F. Elmendorf and Miss Sarah D. Peck.

Hagaman—Darden.—In Centreville, Miss., on Wednesday, October 16th, Dr. R. L. Hagaman and Miss Vernon Darden.

Kamman—Kendall.—In Buffalo, on Wednesday, October 9th, Mr. Charles Kamman and Miss Edith M. Kendall, sister of Dr. H. A. Kendall.

Larue—Rea.—In New Orleans, on Wednesday, October 16th, Dr. Felix A. Larue and Miss Lisette M. Rea.

Lovett—Storey.—In Brookline, Mass., on Tuesday, October 8th, Dr. R. W. Lovett, of Boston, and Miss Elizabeth Moorfield Storey, of Brookline.

May—Castellanos.—In Chinchuba, La., on Wednesday, October 2d, Mr. Edward May and Miss Laura Castellanos, daughter of Dr. John J. Castellanos, of New Orleans.

Michaelis—Gallagher.—In Coney Island, N. Y., on Sunday, October 20th, Dr. William C. Michaelis and Miss Lillie B. Gallagher.

Mitchell—Sheehy.—In Saratoga, N. Y., on Monday, October 21st, Dr. Neal Mitchell, of Jacksonville, Fla., and Miss Mary C. Sheehy.

Postell—Davis.—In St. Louis, on Wednesday, October 9th, Dr. Laurens T. Postell, of Plaquemine, La., and Miss Rachel L. Davis, of St. Louis.

Straub—Mallett.—In New Milford, Conn., on Friday, October 18th, Dr. George E. Straub and Miss Sarah J. Mallett.

Streeter—Carr.—In Boston, on Wednesday, October 9th, Dr. Wyman H. Streeter and Miss Harriet M. Carr.

Strickland—Holmes.—In Pendleton, S. C., on Thursday, October 3d, Dr. A. C. Strickland, of Anderson, S. C., and Miss Fredericka W. Holmes, of Pendleton.

True—Hutton.—In Detroit, on Wednesday, October 16th, Mr. George A. True and Miss Myrtle Hutton, daughter of Dr. W. W. Hutton, of the U. S. Marine-Hospital Service.

Died.

Beckham.—In Kershaw, S. C., on Sunday, October 13th, Clara A. Beckham, wife of Dr. S. Beckham.

Conrad.—In New York, on Saturday, October 19th, Dr. Harry Bell Conrad, aged forty-three years.

Cox.—In Frankfort, Ind., on Wednesday, October 16th, Dr. Timothy B. Cox.

Dwight.—In Boston, on Tuesday, October 8th, John Warren, son of Dr. Thomas Dwight.

Mursick.—In Nyack, N. Y., on Thursday, October 17th, Dr. George A. Mursick, aged sixty years.

Perrin.—In San Angelo, Texas, on Tuesday, October 15th, Dr. William Perrin.

Smith.—In Charleston, on Monday, October 7th, Sarah Atmar, daughter of Dr. R. Atmar Smith.

Soule.—In Winthrop, Mass., on Tuesday, October 8th, Dr. H. S. Soule, aged seventy-two years.

Letters to the Editor.

THE REVIVAL OF THE *INDEX MEDICUS.*

1627 Walnut Street, Philadelphia, *October 14, 1895.*

To the Editor of the New York Medical Journal:

Sir: Last June a movement was started in Philadelphia to endeavor to revive the *Index Medicus* by the formation of a local committee to solicit subscriptions. The members of this committee have endeavored to obtain subscriptions from their professional friends at the rate of twenty-five dollars a year for five years. A proposition was made by us to prominent men in New York and Boston that similar committees should be organized in those cities. I do not know whether formal organizations have taken place in New York and Boston. We in Philadelphia have been at work ever since June and have been able to send to the editors of the *Index Medicus* thirty-seven subscriptions at twenty-five dollars. Nearly all of these subscribers have agreed to continue their subscriptions for five successive years. Perhaps the printing of this short account of our work will give courage to those in other parts of the country who are endeavoring to revive interest in a publication which the American medical profession must not allow to die. John B. Roberts, M. D.,

Secretary of the Committee on Reviving the Index Medicus

PERSISTENT SLOWNESS OF THE PULSE.

Dexter, Iowa, *October 7, 1895.*

To the Editor of the New York Medical Journal:

Sir: A pulse persisting at the rate of from 36 to 40 for several months is a condition to arrest the attention of all medical men, more especially of all country doctors. I send you some notes of a case which, with the autopsy report, may help to establish the pathology of this rare condition.

Mrs. W. F. M., fifty-five years old, had always enjoyed fair health, except for some vague rheumatic pains, together with palpitation of the heart, until last March, when she had an attack of what her attending physician called bronchitis, but which I think might have been *grippe*. It was then discovered that she had a pulse of 40. During the early part of her sickness she had three or four convulsions, which were epileptoid in character. With these attacks her radial pulse was imperceptible, and it seemed that life itself had flown. I was called to her case in July, and found that she had been confined to her bed since March. She was rather too well informed of her condition, and was expecting to die. When I was called I gave her some little encouragement, and put her on the use of tonics and nervous sedatives. Under my treatment she had no more convulsions, and remained with a pulse of from 36 to 40 until September 29th, when, after feeling better than usual for two or three days, she suddenly died. I should say that under the influence of nitroglycerin her pulse went up to 48, when she complained that she could not take the medicine, as it caused violent palpitation. Atropine had a similar effect. These remedies were used for only a few days each. She was well nourished, and slowly gained strength under my treatment, never, however, leaving her bed.

On September 30th, in the presence of a number of the neighboring physicians, I examined only the heart and the great vessels near the heart, post mortem, and this is what we found: The heart was normal in size and relations, and its chambers were all in good condition. There was no disease of any valve. One coronary artery had small calcareous deposits throughout its course. The roof of the arch of the aorta had been chronically inflamed. In the floor of the arch of the aorta there were two flakes of calcareous matter of about the size and shape of the finger nail. The entrance to the subclavian artery was reduced in calibre about twenty-five per cent. by these deposits. The pulmonary vein was acutely inflamed for about an inch from the heart. This is as far as our examination went. I leave the case without further comment. The literature of our profession offers several theories as to the causation of slow heart. Calcareous degeneration of the coronary artery is one of them, and we certainly found it to be present in this case.

W. W. Claybaugh, M. D.

Proceedings of Societies.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

Eighth Annual Meeting, held in Chicago, on Tuesday, Wednesday, and Thursday, September 24, 25, and 26, 1895.

Dr. J. Henry Carstens, of Detroit, in the Chair.

(*Concluded from page 440.*)

The American Association of Obstetricians and Gynæcologists.—This was the subject of the president's address, which was replete with interesting points concerning the growth of the association. Speaking of specialists, he said that what they did was not for themselves, but for the whole profession. They thought they could do more by limiting themselves to a particular branch, and what little they added was not for themselves as specialists, but was to be the inheritance of the whole profession. They wanted the whole profession to be elevated, to become accurate and as near scientific as possible in medicine. They wanted to raise medicine in the estimation of the laity, so that it should not be laughed at and ridiculed in the pulpit or in the court room, but should shine forth as an art and as a science and as the noblest vocation.

The Ætiology of Eclampsia Gravidarum.—Dr. F. Blume, of Pittsburgh, read a paper thus entitled, in which he said that the ætiology of this grave complication of labor was still undecided. The theory which had found the most advocates was based upon investigations which had called attention to the relations between albuminuria and puerperal convulsions. These observations had led to the view that the attacks were the result of blood poisoning by urea; that they were uræmic and identical with those occurring in kidney diseases. According to Spiegelberg, all cases of true eclampsia were of uræmic origin. The cause was a kidney lesion, which either preexisted or developed during pregnancy.

The Prophylactic Treatment of Eclampsia Gravidarum.—This paper was read by Dr. H. W. Longyear, of Detroit. The author recognized two varieties of convulsions that might occur as a result of the pregnant or puerperal condition—first, those of a purely nervous character, which usually occurred in women of neurotic habit and in those who were predisposed to epileptic attacks; and, second, convulsions which occurred as a result of some change in the blood and tissues of the patient due to renal disease, as especially indicated by the presence of albumin in the urine. An early diagnosis was of the utmost importance to the success of any preventive treatment, and to insure this the urine of every pregnant woman should be systematically examined by the physician every two weeks after the sixth month. When albumin was found to be present immediate treatment should be begun, and daily examinations of the urine made thereafter. The author divided the prophylactic treatment into dietetic, medicinal, and operative, the latter to be adopted as a last resort. In simple cases of albuminuria without scanty secretion many patients would do well and be tided along to safe confinement on an exclusive milk diet without medication.

So-called Puerperal Eclampsia in its Relation to Insanity.—Dr. W. P. Manton, of Detroit, contributed a paper on this subject. The author had recourse to three sources of information—statistics from private practice, statistics from the lying-in hospital, and the records of hospitals for the insane. Never having had a case of insanity following eclampsia in his own practice, he had collected 8,868 cases of delivery reported by eight competent observers, published in current medical literature. In this number he found that eclampsia was noticed as having occurred thirty-three times. In not a single instance was it stated that insanity had followed the convulsive attacks. During the four years from 1891 to 1894, inclusive, 282 women had been delivered in the wards of the Detroit Woman's Hospital, and eclampsia had occurred in two cases. Both of the patients had recovered without symptoms of mental alienation. This seemed the more remarkable since, of the 282 patients confined, 233 had been unmarried. During the same period 1,271 women had been admitted into the three principal asylums of Michigan, with which the speaker was connected. Among this number the insanity had been attributed to puerperal causes in 110 instances, but in two cases only had eclampsia been put down as the exciting cause.

The Prevention of Pelvic Inflammation in Women.—This was the subject of a paper by Dr. Rufus B. Hall, of Cincinnati. He pointed out some of the most frequent causes of pelvic inflammation, placing septic infection following abortion and gonorrhœal infection as the most important. He advocated the dissemination of knowledge among the laity by the family physician as a potent means for the prevention of these troubles. He especially advocated that women should be warned by their physicians of the great danger of abortions in the early months of pregnancy. It was well recognized, he said, by the profession that many married women produced abortion in the early weeks of pregnancy, and it was during this time that the membranes were retained, and septic endometritis was induced leading to salpingitis, pyosalpinx, and suppurating ovaries later. He also advocated that the profession should impart knowledge on every legitimate occasion on the subject of gonorrhœal infection in young men and in boys. It was well known that men frequently infected their wives years after they themselves believed they were cured of their gonorrhœa. The author believed that, if the profession imparted this knowledge to the laity, it would only be a short time before many abdominal sections now made for the relief of inflammatory diseases would not be called for.

The Diagnosis of Intra-abdominal Tumors.—Dr. A. H. Cordier, of Kansas City, read a paper in which he outlined the methods and procedures which should be followed in examining patients. Tumors, he said, through which gases were detected by gurgling indicated either an involvement of the bowel in the tumor or pressure of the growth on the bowel with adhesions to the same. If this symptom was coupled with a history of a pyloric cancer or a cæcal growth, it was confirmatory in its indications. Some growths had a disposition to change position, but all growths had one or more attachments, and it was safe to infer that this attachment was to the site at which the neoplasm had its beginning, and its movements would be only around an arc of a circle with the pedicle attachment to the diagnostic point. Adhesions might prevent a growth from moving, or might anchor a tumor in a locality far from its original point of starting. The history of inflammatory attacks and the pain would come to the rescue here. The character of the pain and the amount and area of tenderness were invaluable aids. The withdrawal of free fluid from the peritonæum would often show the presence of a tumor before undetected. Pus in the pelvis was one of the easiest conditions to diagnosticate.

Pneumoperitonæum.—Dr. James F. W. Ross, of Toronto, reported a very instructive case of this disease. He classified pneumoperitonæum as follows: First, tympanites *intraintestina.* Second, tympanites *extraintestina.* Third, tympanites *intra et extra intestina.* With regard to the treatment, he said, exploration by means of a knife and the finger was free from the objection that obtained in the case of a stab in the dark by a trocar. In all these cases the author believed an exploratory cœliotomy should be performed. Even after the removal of the pressure on the diaphragm the breathing improved. It had been stated by one operator that it was necessary, in puncturing in such cases, to allow the gas to escape very gradually.

Large Nephrydrotic Cyst simulating Ovarian Tumor; Abdominal Hysterectomy, followed by Recovery.—Dr. Herman E. Hayd, of Buffalo, reported this case, which was interesting, he said, for the following reasons: 1. On account of the large size of the cyst, as well as the absence of pain or distress in its formation. 2. The obscurity of the diagnosis, or, at all events, the simulation of ovarian tumor by the cyst. 3. The increased functional activity of the one kidney—in fact, its ability to perform vicariously the functions of the other organ. 4. The ease and facility with which the tumor had been removed through the abdomen, and the uninterrupted convalescence for thirteen days. 5. At no time had albumin been found in the urine, and quantitatively and qualitatively the secretion of urine had been above the average. At one testing, the patient had been found to have passed two hundred and eighty-seven grains of urea in twenty-four hours. There had been no evidence of stone or symptoms of previous ureteritis.

The Limitation of Craniotomy.—Dr. William H. Myers, of Fort Wayne, Ind., read a paper in which he said that of late years the happy results following Cæsarean section and Porro's operation had done much to efface the dreadful feeling that we must, in certain cases, decide whether the life of the mother or that of the child was to have the preference, as it was now quite possible to save both. The high death-rate after craniotomy we must refer to the period preceding the introduction of asepsis and antisepsis. The fatality of the Cæsarean section had radically changed, owing to the modifications in the treatment of the uterine wound and to a perfect technique; these had lowered approximately the death-rate to that which was reported for difficult embryotomy, a mortality of ten per cent., with the saving of ninety-five per cent. of infantile life. The author urged that Cæsarean section should be performed as soon as we could be assured of the diagnosis.

Gall-bladder Surgery.—Dr. Edwin Ricketts, of Cincinnati, reported three cases and drew the following conclusions: 1. The continual absence of bile in the intestinal discharges did not necessarily signify that there was a condition of the gall bladder calling for an operation. 2. The bile might flow periodically, and when this was true, symptoms demanding surgical interference were generally present. 3. Jaundice, when present, was a very satisfactory evidence of biliary obstruction, although it was not always present. 4. Pain in the region of the gall bladder coming on at intervals and in connection with jaundice, or without jaundice, in connection with clay-colored stools, was positive proof of biliary obstruction, and then an operation should be resorted to. 5. Persistent clay-colored stools, whether there were or were not severe pains or jaundice with them, were the most reliable symptoms as regarded operative interference. 6. When a stone was primarily engaged in the gall bladder, a pathological lesion began. 7. We might have an obstruction of the common duct due to external trauma, such as a blow received over the region of the liver. This might produce a catarrhal condition of the common duct leading to entire stoppage of the flow of bile. 8. We might have a solitary calculus engaged in the lower end of the gall bladder, causing thickening of the bladder wall and periodical escape of the infected or non-infected contents. 9. We might have calculi formed in the hepatic or common duct. 10. It was important to probe the hepatic duct through the incised bladder in all patients operated upon, whether the condition present was catarrhal alone or with the presence of stone.

Operative Procedures for the Relief of Obstruction of the Biliary Ducts.—Dr. W. E. B. Davis, of Birmingham, Ala., contributed a paper thus entitled. The author alluded to a large number of experiments which he had made on dogs, in which he had tested the value of gauze in draining off bile in injuries of the gall bladder and ducts. He reported cases where he had removed the gall bladder without tying the duct by packing with iodoform gauze. The animals had recovered. In other instances where he had incised the gall bladder and ducts and packed with gauze around the openings, no stitches having been used, the animals had recovered. Complete walling off of the general cavity had been noted when the abdomens of the animals had been reopened. A number had been examined at the end of forty-eight hours. Dr. Davis also reported the case of a human subject in which he had removed the gall bladder and a portion of the cystic duct where there had been obstruction in the common duct and packed with gauze after introducing a glass drainage tube, and there had also been complete walling off of the general cavity. He advised that, in cases of obstruction of the common duct, no attempt should be made to suture the opening after the obstruction had been removed, as the patient's condition was nearly always serious and a prolonged operation would terminate fatally. The obstruction should always be removed, if possible. Dr. Davis's experiments demonstrated conclusively that the peritonæum was capable of taking care of a small amount of bile, but that large quantities or the constant extravasation of it would produce a fatal peritonitis, usually in from twenty-four to forty-eight hours. He thought the field of cholecystenterostomy was a very limited one.

The Use and Abuse of the Uterine Curette.—This was the title of a paper by Dr. W. B. Dorsett, of St. Louis. The more the author had used the uterine curette and seen it used, the more impressed he had been with the following ideas: That the selection as to the shape and form of the instrument in a given case was not always a wise one; that a proper knowledge of its use should be obtained before trying to use it; that it was not a cure-all. Its use should be only in conjunction with other treatment. He looked upon the blunt curette (as sold in the shops) as a dangerous instrument. The instrument with a sharp cutting edge, properly constructed, was a most useful one, and in the treatment of intra-uterine inflammatory conditions was the *sine qua non* of success. In order to secure a good scraping instrument the sharp edge should stand at an angle of sixty degrees to the shaft or handle. A greater angle would not scrape thoroughly, and a lesser angle was apt to incise the uterine wall unless used with a great deal of care. Cases of perforation of the uterine wall were on record, and he thought they were due to want of care in the selection of the proper instrument. The dull or blunt curette should never under any circumstances be used.

Some Anomalies found in Abdominal Surgery.—Dr. Thomas J. Maxwell, of Keokuk, Iowa, followed with a paper on this subject. In the first case reported he had made an incision in the linea alba and had discovered a reddish tumor quite unlike a pearl-colored ovarian cyst. The tumor had been about seven inches in diameter, and had proved to be the uterus containing an interstitial fibroid. An incision about four inches in length through the anterior wall of the uterus had been made and a white fibrous tumor of the dimensions of a cocoanut had been shelled out with the fingers. The incision into the uterus had been closed with buried catgut sutures and fortified with one silk suture in the centre of the cut. A large ovarian tumor had then been brought into view, attached by a very broad pedicle to the right broad ligament. The tumor had been emptied of its contents—two gallons and a half—and had proved to be a monocyst. The author thought the surgeon of to-day would have performed hysterectomy. He believed it was the first case where an interstitial fibroid, complicating a large ovarian tumor, had been enucleated, leaving the uterus intact. He was of the opinion that many uteri and their annexa might be preserved by a similar procedure, and the patients left unmutilated. The patient had recovered. Two other interesting cases were reported.

Should Intra-uterine Injections of Glycerin be used for the Induction of Labor?—This paper was read by Dr. B. M. Hypes, of St. Louis. The author concluded that these injections were often inefficient, especially in doses under fifty cubic centimetres. They were apt to be followed by shock, air embolism, thrombosis, metritis, and sepsis. They might and sometimes did produce glycerin poisoning—decomposition of the blood corpuscles, resulting in diseases of various organs, but more especially in nephritis with hæmoglobinuria. The method involved no consideration of the life of the child, and hence resulted in great mortality. Its use should be abandoned or the doses reduced, especially in subjects with kidney affections.

Has Gynæcology received Just Recognition as a Specialty?—Dr. M. B. Ward, of Topeka, Kan., read a paper with this title. The purpose of this paper, he said, was to call attention to the efforts necessary to elevate gynæcology to a position with the other specialties, and at the same time to discuss the best means to educate the profession and laity to the all-important truth that a gynæcologist should not at the same time be a general practitioner. As specialists, our duty was clearly in the line of spreading the truth regarding the proper methods of examination and treatment of the numerous diseases peculiar to women, in order that every physician should have a reasonably intelligent understanding of the methods of dealing with the simpler forms of diseases. The line must be drawn and, when once fixed, strictly followed, before we could expect to command and receive just recognition as gynæcological specialists. This advice must naturally mean a great financial sacrifice on the part of those who had been combining the entire field of surgery with gynæcology. Such a sacrifice, however, would be as bread cast upon the waters to return after many days. It might even temporarily almost take the bread from the mouths of our children, nevertheless it was the only course to pursue if gynæcology was ever to be recognized as a specialty whose disciples should receive the encomiums to which they were justly entitled.

The Surgical Treatment of Perforation of the Bowel in Typhoid Fever.—Dr. L. H. Laidley, of St. Louis, reviewing this subject, concluded that an early diagnosis and operation offered the greatest chances for recovery. If perforation of the bowel existed, it was the duty of the surgeon to make an exploratory incision, close up the opening, and cleanse the abdomen. The more rapidly the operation was done for closing the perforation, which was usually single, the better. For the closure of the perforation a Lembert suture should be used in small openings; in the larger openings, when the lumen of the bowel would be contracted by the use of the interrupted suture, resection with the use of the Murphy button was the most advisable course to pursue. The author urged that greater interest should be taken in educating the profession to select the cases, many of which were overlooked, to be placed in the hands of the surgeon, and thereby reduce the mortality.

Typhoid Peritonitis.—Dr. J. B. Murphy, of Chicago, reported twenty-eight cases in which operations had been performed by different surgeons. A case reported by Dr. Van Hook, of Chicago, had been the first to end in recovery. Another patient had been operated on by Dr. Abbe, and one by Dr. Ill, and both had recovered. Dr. Murphy also reported cases in which he himself had operated which had been followed by recovery. He held that an early diagnosis and prompt operative interference offered the greatest chances for recovery.

Kraurosis Vulvæ—a Contribution to its Pathology and Therapeutics.—This was the subject of a paper by Dr. H. W. Longyear, of Detroit. All the cases of this affection seen by the author had been in women who had passed the fortieth year, and in each case the symptoms had been manifested coincidently with those experienced by the patient during the menopause. In the first case in which he had recognized the disease the woman had still been menstruating, although irregularly, and the symptoms of the kraurosis had troubled her for about a year, the local appearance of the disease having indicated that it was in an early stage of development. In the second case the symptoms had been manifested for six or seven years; the patient's ovaries had been removed two years before he saw her and before the menstrual function had entirely ceased, and the kraurosis had been found to be in the advanced stage of atrophy. In the third case the symptoms of the disease had begun with the cessation of the menstrual function, and when the patient had been examined by the author four years later the kraurosis had attained what might be called, for comparison, the middle stage. The author then dwelt upon the treatment of this affection, which was both operative and medicinal.

Neurasthenia accompanying and simulating Pelvic Disease.—This was the title of a paper contributed by Dr. C. C. Frederick, of Buffalo. The author defined neurasthenia as an exhaustion of the nervous system, more particularly the sympathetic nervous system, due to malnutrition. After dealing with the symptoms encountered, he said there was a class of women in whom neurasthenia simulated pelvic disease. It occurred in those of a nervous temperament. It was a frequent ailment among our American women. It was seen alike among the rich and the poor, the fleshy and rotund as well as the thin and spare of form. With reference to treatment, to correct so far as possible the habits of the patient which led to nerve fatigue, general tonic treatment and good environment, and, above all, Mitchell's rest treatment, bade fair to do as much for these women as anything thus far advised. Many of them could be nearly or quite cured, and others only partially relieved. Removal of tender tubes and ovaries which were simply tender and not diseased always added to their suffering.

Book Notices.

Skiascopy and its Practical Application to the Study of Refraction. By Edward Jackson, A. M., M. D., Professor of the Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. With Twenty-six Illustrations. Philadelphia: The Edwards & Docker Co., 1895. Pp. 7 to 112.

This is an excellent book. No ophthalmologist can consider himself abreast of the times unless he understands skiascopy, and a better text-book on the subject can not be found. The author is well known as an enthusiast in regard to the practical value of this test in determining errors of refraction, and states that he has written the book as an attempt to bring about the more general adoption of the test among ophthalmologists. Whether he will succeed in this purpose or not remains to be determined, but, whether he does or not, he deserves the highest commendation for the manner in which he has presented the subject *ab initio*, lucidly and in a thorough manner. The author acknowledges that some cases prove difficult and puzzling, and that in regard to these "nothing but a thorough knowledge of the optical principles involved and patient study of the eyes which prove most puzzling, under carefully arranged favorable conditions, will enable one to master the test." But this is only an acknowledgment of an imperfection which certainly exists in every other known method of refractive work.

Eyesight and School Life. By Simeon Snell, F. R. C. S. Ed., Ophthalmic Surgeon to the Sheffield General Infirmary, and to the School for the Blind, etc. With Numerous Illustrations. Bristol: John Wright & Co., 1895. Pp. viii–70. [Price, 2*s.* 6*d.*]

The development of myopia during school life is a subject which has attracted much attention in both Europe and this country. Its importance is much more generally recognized than it was some years ago, and much has been done in the way of prophylaxis in certain places, but a great deal yet remains to be accomplished. Faulty illumination, desks unsuited in size, and indistinct or too small print are the main factors which induce a posture of the body favorable to the development of this condition, which may with some reason be considered pathological. We expect to see these faults remedied gradually, and we hope also to see a retrogression of this "accompaniment of intellectual progress."

This little volume deals mainly with this subject. It originated in a lecture delivered before a teachers' association, and places the matter clearly in language easily understood by persons unfamiliar with the technical language of our profession.

BOOKS, ETC., RECEIVED.

The Pathology and Treatment of Venereal Diseases. By Robert W. Taylor, M. D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons (Columbia College), New York, etc. With Two Hundred and Thirty Illustrations and Seven Colored Plates. Philadelphia: Lea Brothers & Co., 1895. Pp. 5 to 1002. [Price, $5.50.]

A Text-book of Practical Medicine. Designed for the use of Students and Practitioners of Medicine. By Alfred L. Loomis, M. D., LL. D., Professor of Pathology and Practical Medicine in the Medical Department of the University of the City of New York, etc. Revised and enlarged with Two Hundred and Seven Illustrations. Eleventh Edition. New

York: William Wood & Company, 1895. Pp. xvi–1134. [Price, $6.]

A Treatise on Nervous and Mental Diseases. For Students and Practitioners of Medicine. By Landon Carter Gray, A. M., M. D., Professor of Nervous and Mental Diseases in the New York Polyclinic, etc. Second Edition, revised and enlarged. With One Hundred and Seventy-two Illustrations and Three Colored Plates. Philadelphia: Lea Brothers & Co., 1895. Pp. xi–17 to 733. [Price, $4.75.]

A Handbook of Medical Diagnosis for Students. By James B. Herrick, A. B., M. D., Adjunct Professor of Medicine, Rush Medical College, etc. With Eighty Illustrations and Two Colored Plates. Philadelphia: Lea Brothers & Co., 1895. Pp. x–13 to 432. [Price, $2.50.]

Dental Materia Medica and Therapeutics. By James Stocken, L. D. S. Eng., Late Dental Surgeon to the National Dental Hospital. Fourth Edition, revised by Leslie M. Stocken, L. R. C. P., M. R. C. S., L. D. S., and J. O. Butcher, L. D. S. Eng., Assistant Dental Surgeon to Guy's Hospital. London: H. K. Lewis, 1895. Pp. 155. [Price, 4*s.*]

Atlas of the Diseases of the Skin, in a Series of Illustrations from Original Drawings, with Descriptive Letterpress. By H. Radcliffe Crocker, M. D., F. R. C. B., Physician to the Department for Diseases of the Skin, University College Hospital, etc., London. Fasciculus XII. Edinburgh and London: Young J. Pentland. New York: Macmillan & Co., 1895. [Price, $6 each part.]

Medical Diagnosis with Special Reference to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases. By J. M. Da Costa, M. D., LL. D., President of the College of Physicians of Philadelphia, etc. Illustrated with Engravings on Wood. Eighth Edition, revised. Philadelphia and London: J. B. Lippincott Company, 1895. Pp. 3 to 1104. [Price, $6.]

Transactions of the Medical Society of the State of West Virginia. Twenty-eighth Annual Session, June 26, 27, and 28, 1895.

The Thirty-first Annual Report of the S. R. Smith Infirmary for the Year ending May 31, 1895.

Personal Service as the Especial Exponent of a Great Profession. By Henry O. Marcy, M. D., of Boston. [Reprinted from the *Boston Medical and Surgical Journal.*]

Sanitation in Street Pavement. By Henry O. Marcy, M. D. [Reprinted from the *Journal of the American Medical Association.*]

The Surgical Technique of Aseptic Wounds. By Henry O. Marcy, M. D. [Reprinted from the *Journal of the American Medical Association.*]

How Should we Breathe? A Physiological Study. By G. H. Patchen, M. D. [Reprinted from the *Sanitarian.*]

Indications for Electrolysis in Angeioma and Goître. By C. R. Dickson, of Toronto. Read at the Canadian Medical Association, August 30, 1895.

A Series of Clinical Cases. By Charles A. Oliver, of Philadelphia. [Reprinted from the *Wills Hospital Reports.*]

The Therapeutic Value of Oxygen and Nitrous Monoxide in the Treatment of Pneumonia, Bronchitis, Anæmia, and Chronic Diseases. By J. H. De Hart, of Brooklyn. [Reprinted from the *Maryland Medical Journal.*]

The Contagion, Mortality, and Prevention of Whooping-cough. By William Sweemer, M. D., of Milwaukee, Wis. [Reprinted from the *Transactions of the State Medical Society.*]

Twenty-ninth Annual Report of the Home for Incurables for the Year ending June 11, 1895.

Transactions of the Michigan State Medical Society for the Year 1895. Vol. XIX.

Transactions of the Association of American Physicians. Tenth Session, May 30 and 31, 1895. Vol. X.

Miscellany.

Diet in the Ætiology and Treatment of Skin Diseases.—The October number of the *British Journal of Dermatology* publishes an article on this subject by Dr. Walter G. Smith, of Dublin. The belief, he says, in the potency of the influence of diet in the causation of diseases of the skin is universal with the laity and widely acknowledged by the profession. The practice of physicians, however, he says, is not always based upon real conviction or sound knowledge. The real influence of diet in the causation of skin diseases is a small one, much less than it is credited with. But great as are the difficulties of forming a correct judgment of the mode of action of a drug, still greater are the complexities which surround questions of dietetics in the causation of cutaneous affections. We are always and in all places, he says, confronted with the problem of the idiosyncrasy of the individual, which is a real and perplexing difficulty, and should make us more cautious in formulating cut and dried rules for the guidance of our patients' stomachs.

In very many cases an intelligent and temperate patient knows, or ought to know, better than his doctor what suits him and what aggravates his complaint, and the author says that he heartily indorses Sir William Roberts's simple and sensible rule of conduct—viz.: "It may be regarded as certain that any food, or food accessory, the use of which is followed by a sense of discomfort, is not beneficial to that individual." And, conversely, as Pye-Smith puts it, "What most people eat is for most people wholesome, and what a natural appetite finds appetizing seldom disagrees."

Although it is by no means proved that eczema, and even less psoriasis, are parasitic diseases, still the mere ventilation of such a possible cause for these affections tends to throw into the background loose speculations and traditional surmisings as to the effect of dietetic causes in originating diseases of the skin.

There may be four ways, at least, says Dr. Smith, in which diet may possibly influence the skin:

1. *Through the general nutrition of the body.* Nutrition is influenced in a very subtle manner by the quality of the food (Roberts), and insufficient or improper food lowers the tone of all the tissues, the skin included. Under such conditions we meet with scorbutic and purpuric affections. Destructive and pyogenic microbes find a more suitable soil whereon to fasten, and hence a greater liability to pustular and gangrenous developments. The fungus of thrush lies in wait for debilitated constitutions, and favus is more common among the neglected and ill-fed poor.

2. *By acting as a reflex stimulus from the gastro-intestinal tract.* This is doubtless the most common mode. The physiological relationship between the skin and the digestive mucous membrane is incontestable, and proofs are abundant.

Overeating, on the one hand, and, on the other, the use of unsuitable, indigestible, or irritating articles of diet are frequently followed by either neurotic or vaso-motor disturbance in the skin—*e. g.*, urticaria. The skin affections producible in this way are all transitory, and disappear spontaneously, as a rule, when the causes cease to act. Many people eat far too much and overload their digestive capacity. And some of them would pay a worse penalty than they do were it not for the dinner pill, the morning saline, or the occasional visit to Carlsbad.

Three practical considerations, says the author, present themselves here—namely: 1. The utility of purgatives in such cases. 2. The importance of good cookery in avoiding or overcoming dietetic irritation. 3. The due regulation of the diet as to quantity and kind.

3. *By absorption of irritating substances or of products of chemical change into the blood which indirectly affect the skin.* In this direction, says the author, we may look for an explanation, in part at least, of the occasional injurious effects of canned and preserved foods. Pathogenic bacteria may undoubtedly enter the body with articles of diet.

4. *The skin may suffer in virtue of being one of the channels or avenues of elimination.* Certain drug eruptions are perhaps explicable upon this hypothesis. Upon similar grounds we caution our patients against the use of highly seasoned foods and spices in erythematous and acute inflammatory affections of the skin. With regard to diseases of the skin in relation to diet, the author makes three groups: 1. Cutaneous diseases likely to originate in diet or acknowledged by common consent to be materially influenced by it. 2. Cutaneous diseases possibly influenced by diet, but not proved to be. 3. Cutaneous diseases certainly not affected by diet. In the first class, says the author, may be noted erythema and certain forms of urticaria, of pruritus, of acne rosacea, and perhaps of acne vulgaris. In the second class may be placed psoriasis, also most cases of eczema and of acne vulgaris. In the third class there are herpes, pemphigus, lichen ruber, ichthyosis, ringworm, etc.

Boils, says Dr. Smith, are often ascribed to errors or deficiencies in diet. With our present knowledge of the pathogeny of boils it is, he thinks, incredible how a crop of boils, as is stated on good authority, can arise through mere change of diet—*e. g.*, a surplus of animal food.

In England the consumption of meat is a hundred and thirty-six pounds a head per annum. In France it is only forty-six pounds a head per annum. Are boils so much more common in England? he asks. Eczema affects the sexes almost equally, although men probably eat two thirds of the total meat and drink probably three fourths of the total alcohol consumed in the United Kingdom.

If we direct our thoughts to determine what special articles in our dietary may be held responsible for harming the skin, we have not a long list, he says, as will be gathered from the preceding remarks.

Coffee: tea, perhaps; highly spiced foods; the excessive use of hard, salted meat; shellfish; the abuse of alcohol; and foods, such as starch and other carbohydrates, which may lead to the production of excess of acids (acetic, lactic, and butyric) in the intestines.

A widespread and deeply-rooted custom, he says, is the strict prohibition of salted food in diseases of the skin. For many years he has ignored this dictum, and he states that he and his patients have had no reason to regret the liberty accorded to them.

Chloride of sodium is a very harmless salt, and some people with a weak digestion or a jaded appetite will relish and easily digest a thin slice of ham when the stomach would revolt against other meat.

That alcohol is apt to aggravate itching and increase an already existing congestion of the skin is true, he says, but the ill effects of alcohol and also of tobacco as regards the skin are exaggerated by their extreme opponents. In regard to eating and drinking in such cases as diabetes, gastric ulcer, and enteric fever, there is a tolerable degree of unanimity among physicians. With regard to the slighter indispositions of our patients, there is too much formality in the rules laid down, and unnecessary restrictions are imposed. The principal thing to enjoin upon patients suffering from skin diseases is moderation in eating and drinking, especially as regards alcohol. Dr. Smith draws the following conclusions from his observations on the subject: 1. Very few skin diseases are directly traceable to dietetic causes, but improper diet may aggravate existing eruptions. Idiosyncrasy must be largely allowed for. 2. The diseases that may so arise are of a transitory character, and mostly belong to the class of erythemata. 3. Diet has very little influence in promoting the cure of cutaneous eruptions. The results are far behind popular expectations, even in such cases as acne rosacea, where we are led to hope for much. 4. Avoidance of alcohol, regulation of the bowels, and the cure of anæmia are of infinitely greater importance than special dieting in the management of diseases of the skin.

Intestinal Obstruction.—In an editorial in the October number of the *Archives of Pædiatrics* the writer remarks that intestinal obstruction is a comparatively common affection during childhood and infancy. It may be due, he says, to congenital malformation, and if such malformation is extreme, the infant does not long survive, but soon dies with all the symptoms of obstruction of the bowels. In rare instances obstruction results from constriction by adhesions, the impaction of foreign bodies, fæcal impaction, or diverticula. Volvulus is comparatively rare in children. When it occurs, its most common site is the sigmoid flexure. Pain in such cases is violent, and the constipation is obstinate, there being no passages either of fæces, of mucus, of blood, or of flatus. Vomiting occurs late, and is rarely urgent. An operation is extremely unsatisfactory, as the volvulus, even when successfully straightened, is prone to recur.

Of the various conditions to which intestinal obstruction may be due, intussusception is by far the commonest among children. In infancy, intestinal obstruction and intussusception are almost synonymous terms. In more than half of all the cases the lesion begins at the cæcum, the ileo-cæcal variety being the most frequent. The cæcum is first inverted, and afterward the colon. The ileo-cæcal valve is pushed before the ileum and is found at the apex of the intussusception. In rare cases the ileum slips through the valve, forming the ileocolic variety. In all forms of intussusception, except the ileocolic, the apex remains constant, while the neck changes its position, the intussusception growing at the expense of the sheath. The tumor, therefore, advances. In the most common form, the ileo-cæcal, although the lesion begins on the right side, when it has become sufficiently extensive to be detected by palpation the tumor is felt on the left side. The mass with the ileo-cæcal valve at its apex may commonly be felt at the rectum, and not infrequently it protrudes.

The symptoms, says the writer, frequently obscure at the outset, usually become distinctive as the lesion progresses. Violent pain, at first spasmodic; vomiting, frequently persistent; obstinate constipation, with a discharge of mucus and blood from the rectum; tenesmus, which, with the discharge of mucus and blood, may lead the unwary into a diagnosis of dysentery; and the presence of a tumor, are the points upon which a diagnosis is to be rested.

In another editorial the writer deals with the treatment of intussusception, which, being a mechanical condition, he says, must be relieved by mechanical means. Drugs, except opium, are either useless or dangerous. A cathartic should not be used under any consideration when there is even a suspicion of this condition. If one has been administered before the diagnosis has been made, its action should be checked as far as possible by the free use of opium. Opium in small doses, by relieving pain, may, in the first stages, prove of the greatest service. The chief objection to its use is the danger that it may mask the symptoms and lead to the false belief that the patient is improving. Attempts at reduction should first be made by means of injections. Time should not be wasted upon various methods of inflation and taxis. Injections of warm water by means of a fountain syringe are so far superior to all other methods that when they have been thoroughly tested and failed an operation should be resorted to. Thorough testing does not mean spasmodic efforts with a bulb syringe. This is a dangerous instrument, for a man may easily apply a pressure of ninety pounds to the square inch—a force sufficient to rupture the intestine. Here, as in so many other conditions, spasmodic pressure may utterly fail, while continuous, steady, and properly regulated pressure will succeed. Such pressure can not be obtained with a bulb syringe, a bellows, a siphon of Vichy water, or the generation of any gas. We are indebted, says the writer, to Forest, of New York, for careful observations upon the amount of pressure which the intestine will sustain. The normal intestine, he has found, will sustain without injury six pounds to the square inch. Great pressure may be obtained with a column of water according to a well-known hydrostatic law. The elevation of the receptacle each two feet and a half will add a pound of pressure to each square inch. Steady and efficient pressure may be obtained, therefore, by proper elevation of the bag of a fountain syringe. It may safely be held twelve feet above the patient, but less pressure should be tried first. Such pressure has the great advantage of being applied in every direction. It distends the sac, and exerts force upon the tissues which cause the obstruction at the neck of the invagination. After the end of the second day it is unwise to use so much force, for the bowel by that time may have become softened and weakened.

In giving the injection, the writer goes on to say, the child is anæsthetized and the hips are elevated. A large-sized tube is used, and the rectum is occluded by means of a bandage wound about the tip of the tube in the shape of a cone. The pressure, graded by the elevation of the bag, should be steadily applied for thirty minutes. The greatest gentleness should be observed throughout. Should these measures fail when conscientiously carried out, laparotomy should be performed, although the results of this operation have not, on the whole, been encouraging. They have been somewhat more satisfactory, however, he says, during recent years, and great improvements in the results will undoubtedly be obtained by operating earlier under strictly aseptic methods.

King Saul's Disease.—The *Province médicale* for September 21st contains an account of M. Dieulafoy's recent communication to the *Académie des inscriptions et belles-lettres*. It is, says the writer, of an eminently medico-psychological nature and very interesting.

Saul, says M. Dieulafoy, the King Saul of the Bible, was celebrated for his contentions with David, for his visits to the witch of Endor, and for his death at the battle of Gilboa, where he fell on his sword in order not to fall into the hands of his enemies. Was he not neuropathic and hysterical? M. Dieulafoy is of the opinion that he was.

During the course of studies pursued by the author in regard to David and to the Israelites he was led to search for the original cause of prophecy and its influence upon the people. According to M. Dieulafoy, Saul, who was a prophet in the true sense of the word, was not a man of much intellect, but the beginning of his career and the manner of his death showed that he was a proud and high-spirited man. His existence was one of alternate fits of rage and of depression, and he very nearly compromised the destiny of a rising monarchy. Saul and the prophets were, in fact, neuropathics in whom a neurosis was vested with the characteristics of the epidemics of violent hysteria of which history offers such striking examples.

M. Dieulafoy borrows from the Bible the descriptions of the mystic manifestations which were produced by the clairvoyants, and he alludes to the epidemics of violent hysteria from the time of the chorea, or dance of Saint-Guy, and the tarantism which prevailed during the fourteenth century in Germany and in Italy, up to the time of the possession of Jaca, which takes place every year in the north of Spain on the occasion of the feast of Santa Orosia, the patron saint of that town.

M. Dieulafoy shows that from the time of Samuel violent hysteria of a contagious form existed among the Hebrews. It was, moreover, consecutive to a religious outbreak and to an interval of physical and moral depression, which was occasioned by the scourge and by long privations. The verses especially devoted to Saul confirm these conclusions. Saul's singular attitude after Goliath's death, his obstinate desire to kill David and his son Jonathan, and finally the condemnation and the massacre of the Levites, all correspond with the delirium and with the homicidal mania of demoniacs.

The outbursts of the monarch were an exact reproduction of the premonitory symptoms of the chronic phases of attacks which correspond with the demoniacal form of violent hysteria from which Saul was suffering.

M. Dieulafoy concludes from his observations that Saul had at first transitory attacks, with long intervals between them, which finally became aggravated and occurred more frequently, and that from that time he was not responsible for his acts. His subsequent attacks bordered on insanity, and he was under the domination of a fixed idea, even during the periods of remission. The smallest blow to his vanity was sufficient to madden him, and, blind in his rage, he was relentless in the pursuit of the unconscious person who provoked his wrath.

Apart from the light that it throws on prophesying, says the writer, this research magnifies David's relations with Saul, and enables us to pass a decisive judgment in favor of the former. It also shows how the Bible remains sincere in spite of a king, whose bad qualities it ignores, and his victim, whose generosity and patient endurance it does not praise, proving by that the historic value of the chapters consecrated to the history of the sons of Isaiah. Finally, it shows the material causes of the rapid multiplying of the prophets and of their great influence upon the people. Aside from the religious point of view, these causes were connected in a great measure with the pathological characteristics of foretelling the future and with the contagious form, to which the minds of the people were predisposed even when it did not dominate them.

Precepts for Cyclists.—The *Lancet* for October 5th contains a short article on this subject in which the writer remarks that cycling seems to be quite as popular in France as it is in England, and yet, he says, there are medical authorities among the French who condemn the practice because, in their opinion, it is likely to be attended by cardiac or circulatory troubles. So far as he is aware, he says, no well-authenticated cases of disease arising from the use of the bicycle have been placed on record, and on the whole it may be said that self-propulsion on two or three wheels is about as salutary a form of outdoor exercise as could well be devised, provided always that the injurious and hideous bent posture affected by the racers is rigorously avoided, and the following directions are carried out: 1. No one should become an habitual cyclist without medical authorization. Before committing himself to an opinion the medical man consulted will do well to examine the beginner after his dismounting from the machine as well as beforehand, for there are certain cardiac defects which become recognizable only when the subject is under the influence of excitement or fatigue. 2. A cyclist should at first be content with a moderate pace, not exceeding twelve kilometres an hour (about seven miles and a half). A higher rate of speed should be indulged in only after the rider has gone through a regular course of training. If a break in the practice occurs, lasting even a few days, the cyclist should begin again at the slower rate. 3. The temptation to go quickly must be controlled as far as possible. A bicycle travels well-nigh of its own accord, and it is very hard to resist the "delirium of speed." With a light machine on a good road, and helped ever so little by the breeze, an amateur, even when only half trained, can easily achieve his twenty-five kilometres within the hour (fifteen miles and a half). This is too much, seeing that when doing from fourteen to sixteen kilometres the rider's pulse rises to 150.

Cases of Functional Paralysis; Treatment by Hypnotism, Myelin, etc., with Recovery.—The October number of the *Glasgow Medical Journal* publishes an account of two cases which came under Dr. Alexander Robertson's observation in which the defects were both motor and sensory. In the first of these cases, says the author, the improvement was so great and so speedy on both occasions after the use of the myelin that it was difficult to avoid coming to the conclusion that the change for the better was due to this agent. Care was taken to avoid explaining its nature to the patient, although Dr. Robertson thinks he would soon have come to know what it was. It is certainly open to question, he says, if the idea of a new, and what might appear to him mysterious, agent had not much to do with the ætiology of the improvement. Still, the impression remains that some constituent of the myelin had probably stimulated his brain cells, and that the partial recovery might correctly be attributed to it. Dr. Robertson states that he has administered this medicine in a considerable number of cases, both of organic and of functional diseases of the central nervous system. Where there was organic trouble he has not seen clear evidence of benefit from its use. In functional disorders, particularly the less severe forms, it has occasionally been of distinct service. The author is disposed to regard it as a special but mild stimulant, more particularly in states of depression of the brain and of the nervous system generally.

Perhaps, he says, even more decided and striking was the completion of the patient's recovery under hypnotism. The idea suggested to his mind, while he was in this state, of complete restoration to health seemed to exert a powerful stimulating action on the brain. Such cases, says the author, furnish fair and legitimate fields for the use of this remarkable agent.

In the second case the most remarkable feature was the rapid recovery from the all but complete abolition of sensory function, with the less complete but still very marked impairment of motor power. There was absence of ordinary hysterical symptoms, but there can be no doubt, says Dr. Robertson, that the condition of the patient was closely allied to, if not identical with, what exists in cases of that kind. But to name it hysterical is, he says, to use a mere cloak for our ignorance of its nature. He prefers to call it functional, for that word conveys the impression that it is the office or sphere of action of the organ involved which is disordered or in abeyance for the time. It also suggests, what is desirable to bring out in relief, that no important structural change exists, but only some molecular disturbance, inappreciable to our means and powers of investigation.

It has only further to be remarked, he adds, that it is in such cases that electricity shows its most brilliant successes. The disappearance of symptoms of such apparent gravity within twenty-four hours after the application of the faradaic current was very striking.

Borax in the Treatment of Epilepsy.—In the September number of the *Revue de médecine* M. C. Féré gives an account of the result of this treatment in a large number of cases which have come under his observation during the last seven years. The borax was administered for vertigo and convulsive symptoms in epilepsy. The author gives the particulars of eleven cases from which he draws the following conclusions: These cases may be divided into three categories: 1. The most numerous, comprising 71·31 per cent. of the cases in which the results of the treatment had been *nil.* 2. Comprising the doubtful or temporary ameliorations, or inferior to those which the bromides may give; this category contains 19·67 per cent. 3. Finally, the most marked ameliorations, but of which none had lasted a sufficient length of time to enable him to hope for an ultimate complete suspension. The percentage here was 9·01. In the latter category, says the author, only one case of hemiplegia was observed, while in the others they were more numerous. Consequently, borax does not seem to be especially indicated in this condition.

Although, says M. Féré, borax seems to have a somewhat marked therapeutic action, it also often presents inconveniences. Intestinal troubles are frequent, and they are often intense enough to require the suspension of the drug. It causes a dryness of the integuments, meaning not only the skin, but also the mucous membranes. It may provoke constitutional cutaneous manifestations, particularly psoriasis. The most frequent eruption is a variety of eczema, which answers to the description of seborrhœal eczema, but which may assume varied aspects. Cachexia due to the use of borax may manifest itself aside from all kinds of cutaneous eruptions, and it is often accompanied with a general waxy tint of the skin and with discoloration of the mucous membranes.

Besides the cachectic œdema, says M. Féré, which often accompanies cutaneous symptoms due to the borax treatment, if the urine is examined, albumin will be found. The necessity of examining the urine of all subjects treated with borax who present symptoms of œdema is obvious. Renal troubles may exist and reach such an intensity that even the suppression of the drug is powerless to arrest their progress and the consequences.

Borax, then, says the author, may provoke symptoms as serious as those due to bromide poisoning, with this difference, that the possibility of their arising in the kidneys renders them more insidious and more difficult to stop.

Taking everything into consideration, he says, if the borax more frequently has no action or only an ephemeral one, it is not to be doubted that it may be useful in some cases, and that it may prove to be even superior to the bromides. It is indicated only when the latter have given no results, for borax is not only an uncertain drug, but a dangerous one, and its constant employment must be watched because of the renal symptoms it may provoke, even when given in small doses.

An Unjust Accusation of a Physician.—At a regular meeting of the executive committee of the Medico-legal Society, held on October 7th, the secretary, Mr. Clark Bell, called attention to the case of Dr. Bettini di Moise, who had been accused in the newspapers, arrested, and honorably discharged by the court on the recommendation of Assistant District Attorney Lewis, in a manner as honorable to that officer as it was creditable to Dr. di Moise.

Mr. Albert Bach, vice-president of the society, said that, as one of the counsel for Dr. di Moise, he would repeat the language of Assistant District Attorney Lewis, who, in moving for the discharge of Dr. di Moise, had said that he felt it to be his duty as a prosecuting officer as much to protect the innocent accused person as he did to prosecute the guilty, and that he believed Dr. di Moise to be innocent. Thereupon Dr. di Moise had been discharged by Justice Wentworth.

Mr. Clark Bell moved the adoption of a resolution to the effect that the executive committee of the Medico-legal Society felt it due to the sense of justice of every member of the body to express their full confidence in the character of their associate, Dr. Bettini di Moise, their gratification at his honorable discharge on the false charge made against him, and their thanks to Assistant District Attorney Lewis for the manly and honorable course he had taken in the investigation.

Mr. Moritz Ellinger spoke with great feeling of the regret he had felt at the announcement in the public press referred to, the high character of Dr. Bettini di Moise, and the high position he held in the community and the society, and supported the resolution.

Judge Abraham H. Dailey supported the resolution, warmly indorsing the social and professional position of Dr. di Moise and denouncing the assault upon his character. Mr. Clark Bell expressed the high confidence felt in Dr. di Moise by the society and by those who knew him, and, after a careful examination of the official minutes of the evidence before the coroner's jury, expressed his entire approval of and concurrence in the action of Justice Wentworth in discharging Dr. di Moise, as that officer had done. He praised Assistant District Attorney Lewis for his manly and honorable action as a public officer, and said it ought to be commended and approved by all good citizens.

The resolutions were unanimously adopted.

The Transmission of Scarlatina by Means of a Letter.—The *Boston Medical and Surgical Journal* says that Grasset (*Annales d'hygiène publique*) relates a case of scarlatina transmitted by letter. The patient was a little girl, aged nine years, living with her grandmother at some distance from her paternal home. No case of scarlatina had been before noted for many years in that locality. The little girl during the period of desquamation wrote a letter to her parents, and as the peeling was abundant, she inclosed several of the epidermic scales in the letter. The letter, after having been read by the father and mother, was handled by the little brother, aged two years, who, in from six days and a half to seven days afterward, came down with scarlet fever.

This case, says the writer, resembles that recorded by Sanné. A woman and her daughter living in Brittany received from Germany a letter in which the writer announced that she had just had scarlet fever, and that she was desquamating so profusely that in writing she had been obliged to shake the paper several times to remove the scales which had fallen upon it. Several days afterward the mother and daughter were taken down with scarlet fever; the mother succumbed and the daughter got well.

The transmission of scarlet fever by books is also possible, the writer continues, and this medium of contagion must always be borne in mind in speculating as to the mode of origin of obscure cases. Dr. Fox (on the authority of *La Semaine médicale*, 1889, page 94), having observed three cases of scarlet fever in a house, was led to suspect a book loaned from a public library as being the medium of contagion. An investigation showed that this book had been loaned a little while before to a family in which there had been a case of scarlet fever, and had been read by the sick person during convalescence.

The Late Dr. Henry W. Rand.—At a meeting of the college faculty of the Long Island College Hospital, held on October 8, 1895, the following report was unanimously adopted:

The committee appointed at the last meeting of the faculty to take action in regard to the death of Professor Henry W. Rand submits the following: The pain at parting from our beloved associate, Professor Rand, can not be expressed in words. We can only say that his loss is deeply felt, and that our sorrow is as profound as was our love for him. Our admiration for the man was the highest and most enduring, and was inspired by his many noble qualities of head and heart. In all his relations to us, the teaching faculty of this institution, he was always honest, honorable, earnest, and competent. He was securely established upon the highest plane of professional success, and while we were rejoicing in the hope that he would continue his good work for many years he was suddenly called hence. We all feel that his devotion to his profession, his interest in his brethren, and his ceaseless services to those committed to his care were instrumental in taking him from us at the noon time of his noble life. While this thought adds greatly to the burden of our grief, it magnifies the greatness and goodness of the man. There was no shadow of selfishness in the heart of this man, who gave all for the welfare of others. Feeling keenly our own loss, we naturally think of his family, and our sympathy is extended to them in all kindness and sincerity. The committee suggests that this all too meagre tribute to the memory of our deceased associate be spread in full upon the minutes, and be published in the medical press and in the daily press of Brooklyn; and that a copy be transmitted to his family.

[*Signed.*]
Alexander J. C. Skene,
Jarvis S. Wight,
Frank E. West,
Committee.

A Remedy for Insect Bites.—The *Lyon médical* for September 27th publishes the following formula: Ammonia water, forty drops; collodion, seventy-five grains; salicylic acid, four grains and a half. A few drops of this mixture are to be applied to the bites. Another remedy is Van Swieten's liquor, with which the affected part is to be bathed until the effects of the bite have disappeared. In the majority of insect bites the results are good.

The Index Medicus.—At a meeting of the Philadelphia County Medical Society, held on September 11th, a resolution was adopted that the society subscribe for two copies of the *Index Medicus*, and that notice of this action be sent to the other county medical societies of Pennsylvania and also to the medical journals.

THE NEW YORK MEDICAL JOURNAL, NOVEMBER 2, 1895.

Original Communications.

SIMULTANEOUS
DOUBLE ANEURYSM OF THE FEMORALS
ON THE SAME SIDE,

AND OF THE FEMORALS AND POPLITEAL ON THE SAME SIDE.
ALSO CASES OF
SIMULTANEOUS TRIPLE AND QUADRUPLE ANEURYSM
ON THE SAME LOWER LIMB.

By EDMOND SOUCHON, M. D.,
PROFESSOR OF ANATOMY AND CLINICAL SURGERY IN TULANE UNIVERSITY, NEW ORLEANS; FELLOW OF THE AMERICAN SURGICAL ASSOCIATION.

Upon taking charge of my surgical service at the Charity Hospital on the 8th of October, 1894, it was my good fortune to find in Ward 2 a case of double aneurysm of the superficial femoral artery on the left side.

The man presenting this most rare affection was Richard P., a mulatto, forty-three years of age, well built.

His work is rather hard; he is a teamster, and often does heavy lifting. He remembers no injury at that part of his body at any time. His personal history is good; he has not had syphilis; he says he does not drink, and he shows not the slightest evidence of alcoholism; he has always enjoyed good health, and can not remember that he has ever been sick. His parents, so far as he can remember, were also very healthy.

He recounts that two months previous to his admission into the hospital his attention was called by pain to the lower part of his left thigh, where he detected the presence of a tumor of about the size of a large hen's egg. Upon examining that region we found, in fact, a tumor at the point corresponding to the opening in the third adductor—*i. e.*, at the lower and inner part of the thigh—but the tumor had acquired the size of a cocoanut. It presented all the signs of an aneurysm, especially the pathognomonic expansion, with mobility upon the deep parts, which distinguished it at once and for good from a pulsating encephaloid.

Upon closer examination another similar tumor was found at the apex of Scarpa's triangle, but of the size of a hen's egg only. This tumor also was pulsating, with expansion, and was not connected with the deep parts—*i. e.*, with the femur. The whole leg was painful, swollen, œdematous, with dilated superficial veins plainly delineated and filled, all of which indicated serious pressure symptoms. No other aneurysm was found on any other artery, external or internal. All the other organs were in a normal condition.

Remembering how aneurysms may sometimes be cured by using very simple means, I decided, of course, to try some of them. Accordingly the limb was elevated, but with no benefit, not even to the pain and swelling. Continuous digital compression failed to be carried on satisfactorily. Compression with the Massachusetts General Hospital compressor was tried without any good results; on the contrary, its application below Poupart's ligament was so painful that to give it a full test the patient had to be kept under the influence of chloral and bromide; besides, it bruised the tissues considerably when it was so applied as to arrest all pulsation in the two tumors. Finally, the Esmarch bandage was applied, the rules laid down for its use in such cases being carefully observed. Its application was also very painful, and required the use of chloral and bromide. The Esmarch did no more good than the other means employed, and it was nearly time to consider the use of the ligature.

The case had caused somewhat of a stir in the hospital circle, and when it was heard that, all other means having failed, it was now time for the ligature, the interest in the case grew greater, and opinions, solicited and unsolicited, were not lacking. Some advised the ligation of the common femoral—it was so close by, so superficial, so easy to expose, so tempting; others, the ligation of the external iliac; others, that of the superficial femoral in the middle of Scarpa's triangle.

I, upon whom the responsibility rested, was perplexed for a while; there was no mention of any such case in any of the authorities at my command, and the course of the case did not look as if it would give us time to appeal to our great comforter, the Library of the Surgeon General's Office in Washington, through the National Bureau of Medical Bibliography.

The ligation of the common femoral I rejected at once. Although the easiest operation, its performance, shutting off the collateral circulation through the deep epigastric and the circumflex iliac, condemned it in my mind as being worse than the ligation of the external iliac. The ligation of the external iliac, for whatever cause it has been practised, having frequently been followed by gangrene, I would not consider it except as a last resort.

The only ligation to perform, then, was that of the superficial femoral, at equidistance between the origin of the deep femoral and the upper aneurysm. I thought that that would surely cure the upper aneurysm, but I had some misgiving about its effects on the lower aneurysm, by far the larger, which I thought would be kept alive through the anastomoses of the deep femoral with the muscular branches of the superficial femoral given off by this trunk beyond the upper tumor. Still, as this was a simpler and a safer operation than the remaining one to be considered—removal of the sacs of the aneurysms—I decided upon doing this first and being guided ultimately by what was accomplished by it. I decided also to delay any immediate operative procedure until the skin and the tissues which had been bruised by the compressor had resumed their natural tone.

However, the lower tumor grew so rapidly and was causing such swelling of the leg and such pain that I feared a rupture of the sac and the formation of a diffuse aneurysm. This, we shall see later, has happened in three cases (Morton, Munro, Walton). Therefore I very reluctantly saw myself forced into operating upon unsound tissues and having to face the consequences—inflammation, suppuration, and hæmorrhage.

In a similar case (Damaschino) the great Velpeau took the same risk. It was, however, the lesser of the two threatening evils, and I decided in its favor. I had, of course, settled upon using aseptic animal absorbable ligatures, and upon placing two ligatures, after the Senn principles, and without rupturing the coats, hoping that if suppuration took place we might possibly still escape hæmorrhage.

Accordingly, on October 24th, aided by our staff and by the house surgeon, Dr. J. D. Bloom, I proceeded to ligate the superficial femoral in the middle of Scarpa's triangle. The tissues traversed were blended together by plastic lymph and the artery was comparatively deep-seated. After I had exposed it, two strong kangaroo ligatures were placed around it close to one another contiguously. Then, Dr. Bloom having placed his hands upon the aneurysm below and having well detected the pulsations, the proximal ligature, as recommended by Senn, was first tightened gradually, gently, very gently, and as soon as Dr. Bloom said the pulsations were stopped the tightening of the ligature was also stopped. Some thirty seconds were allowed to elapse and, no pulsation returning in the aneurysm, the second knot was made and the first ligature completed.

Then the second or distal ligature was applied in the same manner. A third knot was made over the second knot and the ends of the same ligature were tied together with fine silk, to make sure against any untying from the swelling of the ends. The sheath of the vessel was stitched over the ligatures with catgut and the other layers were approximated in the same way. The ordinary dry dressing was applied, and the patient was carried back to his bed. He expressed the sense of a great relief.

All went well for the first four days, when (October 29th), the dressing being stained, it was removed; it was then found that the lower or larger aneurysm was not pulsating, but that the upper or smaller one was as alive as ever. Now this was quite a surprise. I had expected the upper or smaller aneurysm to be cured and had expected trouble from the lower one, and the very opposite had taken place. A similar occurrence happened in a case of Broughter's.

How did the blood penetrate to the upper aneurysm? Surely the two stout ligatures had not been absorbed in five days' time, and the blood was not again finding its way through the main channel of the artery. It could, then, only be through a collateral branch given off by the superficial femoral above the ligature or by the deep femoral, and anastomosing with a branch given off also from the superficial femoral, but below the point of ligature, emanating from the sac itself perhaps. There was some consolation, however, in having cured the larger of the two, since the only resort left, extirpation of the sac, would be an easier and less dangerous operation on the smaller aneurysm than on the larger one.

Upon removing the dressing for the second time a few days later (November 2d), there was evident suppuration in the operative wound. Accordingly the sutures were removed, and the small cavity was irrigated and packed with iodoform gauze.

The much-dreaded hæmorrhage might now occur at any moment, although we hoped that the use of animal ligatures without rupturing the coats might prevent it. However, we instructed the student, the nurse, and the patient himself as to what might happen and what to do until surgical aid could be procured; the bandage was also kept tighter than usual over the region, and the region left uncovered so as to reveal the first speck of blood.

All these precautions were not in vain, because the secondary hæmorrhage took place here (November 3d), as in so many other cases before; but the patient and the nurse compressed the wound and the artery until assistant house-surgeon Parker enlarged the operative wound and ligated the bleeding end of the artery. This bleeding end was the upper or proximal end. This at once stopped the hæmorrhage and also the pulsations of the upper small aneurysm.

Three days later the pulsations had returned again and for the second time in the upper small aneurysm. How could that be? Such hæmorrhage and return of pulsations occurred also in a case of Solly's, to be described later. There must have been another anastomotic branch similar to the one above described.

Everything was going well when, on November 9th—that is, six days later—a second hæmorrhage took place. The nurse and patient, ever watchful, controlled this also until the same assistant house surgeon came and, again enlarging the operative wound above, ligated the proximal end for the second time. This only partially stopped the bleeding and, as it was found that the distal end also was bleeding, that end was in turn ligated. All bleeding stopped then; all pulsations again stopped in the upper smaller aneurysm. No further trouble was experienced in the way of bleeding or pulsations. Evidently the ligature on the distal end had caught the branch which anastomosed directly or indirectly through the substance of the muscles with the branches coming from the main trunk above the point of ligature. Surely the lower anastomotic branch did not come from the sac itself.

In view of a possibility of another return of the hæmorrhage from the upper end, I advised, if it should occur, ligating again in the wound, and then ligating also the external iliac, so as to give the artery a better chance of closing, in preference to ligating the common femoral, since the latter would shut out the collateral circulation of the deep epigastric and circumflex iliac. I thought that the ligature of the external iliac at this stage would have a better chance of not producing gangrene, because the collateral circulation had developed to some extent by this time.

In case recurrent hæmorrhage took place from the lower end I advised the extirpation of the sac. Some advocated that all this should be done at once without waiting for the recurrence of the hæmorrhage, but, since the patient was surrounded by all possible safeguards and watchfulness, I thought it would be better to wait until the positive indication presented itself, and thus the patient was saved these ordeals and the danger of possible gangrene from the ligation of the external iliac.

During all this time the larger, lower aneurysm had shrunk rapidly about a third of its original size and no pulsation had returned into it, but there it remained, neither diminishing nor gaining. It was fluctuant, and this was surely due to fluid blood or soft black clots.

It was about that time (January 2d) that the Charity Hospital and Tulane Medical College were favored by a visit from the distinguished surgeon, Dr. Nicholas Senn. He expressed much interest in the case, having never seen such a one or heard of any such before. Indeed it is to his kind encouragement that the writing of this essay is due.

I was much gratified to have my diagnosis corroborated by so high and reliable an authority. Accordingly I punctured the lower tumor with the large needle of the aspirator, but no blood came. I was so confident that it was the presence of clots that was keeping the tumor from shrinking and undergoing a cure that I incised it (January 4th), when about three ounces of soft black clots were removed. The cavity was packed, and four days later a drainage-tube was inserted into it.

After that the tumor diminished uninterruptedly and was finally cured. However, the operation wound in Scarpa's triangle had grown fistulous, and I was still apprehensive of some more hæmorrhage from that point, as has happened in so many cases of aneurysm. This aneurysm, although much reduced and deprived of pulsations, was still fluctuant, as was recognized also by Professor Senn, and I waited patiently for some time.

After a while, the tumor having disappeared almost entirely, it was thought high time and safe to enlarge the fistulous tract and explore it; this being done, it was found, as surmised, that the silk ligature used was at the bottom of the tract and was keeping up the suppuration; it was removed, and the wound was packed and made to heal from the bottom, which it did rapidly.

I believed that now the poor and much-tried patient would surely soon be well, but I had reckoned without erysipelas (February 9th). It is a very rare complication here, but a colored patient with the disease had been admitted into the ward for a few hours before the case was well recognized on account of the patient's very black skin. The man was transferred to the ward for contagious surgical diseases.

A remarkable feature was that the first patch showed itself in the middle of the outer part of the thigh, independently of any one of the two operative wounds of the region. The patient was also sent to the proper ward, where he remained some twelve days.

When he was sent back to our ward (February 18th), he was exceedingly emaciated, he had a high temperature, especially at night, and his left knee joint was full of pus. We all thought that surely poor Dick's end had come. It was a great and general disappointment to all of us to lose the patient after he was really practically cured, and after such a struggle and such care; a case so rare and so pathetic. There was one solace, however, and that was that we should know exactly what circulation had taken place in that limb.

But the possessor of such rare aneurysms was also the lucky possessor of a remarkably fine and enduring constitution, so that after the knee had been drained thoroughly he immediately began to improve, and made an uninterrupted and final recovery, all wounds having thoroughly and finely healed (February 29th).

His case stands to-day the first and only one on record of a simultaneous double aneurysm of the superficial femoral on the same side cured by ligation. All those around the patient, whether connected with the case or not, did all in their power to help him through his ordeals, but none so continually, so faithfully, and so efficiently as the devoted and untiring interne student, Mr. W. A. Carnes.

Résumé of the Case; Simultaneous Double Aneurysm of the Superficial Femoral on the Same Side (*Left Side*).—Richard P., mulatto, aged forty-three years, is a teamster, and is exposed to raising heavy weights. No alcoholism; always enjoyed good health; family history good. Admitted to Charity Hospital on October 8, 1894. He presents at the opening of the great adductor of the left thigh an aneurysm of the size of a cocoanut. Also at Scarpa's triangle another aneurysm of the size of a hen's egg. All the signs of aneurysms are present. Also œdema of the foot and leg; much pain. No other aneurysms of any of the other arteries; all the organs healthy.

The leg was elevated without benefit; digital compression was used, but not thoroughly; the Esmarch bandage was applied, but without any good; the Massachusetts General Hospital compressor was used on the superficial femoral, but bruised the tissues and caused such pain that its use had to be discontinued.

The lower tumor grew so rapidly that its rupture was apprehended, and the superficial femoral was ligated in the middle of Scarpa's triangle (October 24th), in spite of the bruised condition of the tissues.

This was considered less dangerous in its possible consequences than rupture of the lower aneurysm or the ligation of the common femoral or of the external iliac.

A double contiguous kangaroo ligature was applied without rupturing the coats of the vessel.

On October 29th the dressing was removed, and the upper aneurysm was found pulsating just as strongly as ever.

October 30th.—Suppuration of wound.

November 2d.—Hæmorrhage from wound. The patient and nurse, who had been instructed beforehand, compressed the artery until Assistant House Surgeon Parker came, enlarged the operative wound, and placed a silk ligature on the bleeding upper end. The hæmorrhage stopped, also the pulsations in the upper aneurysm.

3d.—Return of pulsation in the upper aneurysm; the lower aneurysm had no pulsation and had diminished one third.

7th.—Another hæmorrhage; enlargement of the wound; ligature of both ends of the bleeding vessel. All bleeding and pulsation had stopped and never returned.

January 4th.—Incision of the lower aneurysm and turning out of black clots. Also incision of a fistula at the operative site, and removal of a silk knot.

20th.—Erysipelas from an outside case just admitted.

February 17th.—The patient returns from the erysipelatous ward much emaciated, with high fever, and knee joint full of pus. Incision, drainage. Gradual healing of wounds.

Cured, February 29th.

Conclusions from the Foregoing Case.—1. Should such another case present itself, I should surely not apply the compressor over the superficial femoral, especially with a tumor of a certain size which might take on rapid growth and force an operation through bruised tissues. In one of the cases reported below the great Velpeau himself decided to operate on bruised tissues.

2. The ligature should be applied as close to the sac as the condition of the artery will allow—that is, if it is not thinned and dilated so as to shut out the collateral branches which caused the return of the pulsations in the upper tumor.

3. Should this fail, extirpation of the sac is the next thing in order, applying or not the Esmarch bandage and band.

In cases of high femoral aneurysms a provisional loop ligature, after the manner of Rivington (1) and Treves (2), should be applied to the artery above (common femoral or external iliac). Also when it is deemed impossible, for some reason or other, to use Esmarch's band. By applying it around the common femoral when extirpating lower aneurysms, the bleeding from the branches of the deep femoral is also controlled. It is more effectual than digital compression, because then the assistants will become tired.

By provisional loop ligatures I mean the passing of a strong, thick silk thread under the artery, using, if necessary, an aneurysm needle with a movable point; then, without attempting to make any knot, simply pulling firmly on the two ends of the thread, so as to raise the artery and arrest the circulation through it. If need be, the index finger of the other hand may compress the artery against the thread. Treves says that no local inflammation or obstruction followed in the cases where he has used it. If a knot is tied, it should be tightened just enough to stop the circulation and no more, surely not enough to rupture the coats.

There is no risk of occluding the artery, because Ballance and Edmunds (3) state from experiments that, if a ligature is applied to a vessel and then immediately removed, the vessel will not, as a rule, be occluded, even if the coats are ruptured. And we are here careful not to rupture the coats.

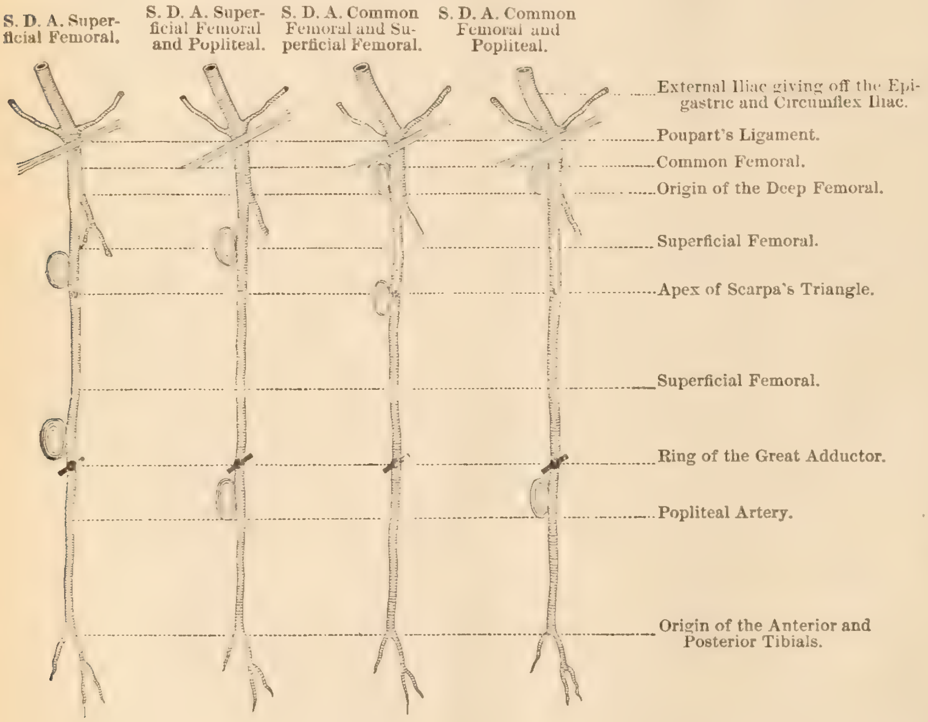
The effects of this procedure will be to allow of as bloodless an operation as possible under the circumstances, to allow of a thorough examination of the affected artery, and to show where the permanent ligature can be placed with the greatest safety. Then the provisional ligature is removed. It may be found that the provisional ligature should be converted into a permanent one by exchanging or not the silk for a single or double catgut.

4. Upon perusing the cases given below it will be seen how fortunate was our course in resisting the ligation of the common femoral or of the external iliac, since the two cases where this was done terminated fatally.

5. Would it not have been better to extirpate the upper aneurysm rather than to ligate the artery above it? This would have cured both aneurysms at once!

History of the Cases on Record. — Upon having researches made in the Library of the Surgeon General's Office at Washington by the National Bureau of Medical Bibliography (4), the following cases are all that could be found on record.

They comprise not only simultaneous double aneurysm of the femoral on the same side, but also aneurysms of the femoral and of the popliteal existing also simultaneously on the same side. The popliteal being really the prolonged femoral, I have thought that instructive points might be gained from the study also of such cases.


Simultaneous Double Aneurysm of the Femorals and Popliteal on the Same Side.
S. D. A. Superficial Femoral.
S. D. A. Superficial Femoral and Popliteal.
S. D. A. Common Femoral and Superficial Femoral.
S. D. A. Common Femoral and Popliteal.
External Iliac giving off the Epigastric and Circumflex Iliac.
Poupart's Ligament.
Common Femoral.
Origin of the Deep Femoral.
Superficial Femoral.
Apex of Scarpa's Triangle.
Superficial Femoral.
Ring of the Great Adductor.
Popliteal Artery.
Origin of the Anterior and Posterior Tibials.

The cases are divisible into four groups:

1. Simultaneous double aneurysm of the superficial femoral alone on the same side.
2. Simultaneous double aneurysm of the superficial femoral and of the popliteal on the same side.
3. Simultaneous double aneurysm of the common femoral and of the superficial femoral on the same side.
4. Simultaneous double aneurysm of the common femoral and of the popliteal on the same side.

These important clinical varieties are made much more plain by the accompanying diagram.

I will now proceed to describe the cases of each group, and afterward I shall endeavor to point out the remarkable features of the cases and to draw all the practical conclusions possible.

I. SIMULTANEOUS DOUBLE ANEURYSM OF THE SUPERFICIAL FEMORAL ALONE, ON THE SAME SIDE.

There are four cases of double aneurysm of the superficial femoral alone, on the same side.

Case I, 1863 (Damaschino [5]).—Two traumatic aneurysms close to each other in the middle of the thigh. Digital and mechanical compression of no benefit; ligation performed over the spot of compression because the tumor was too high to do otherwise; ligature of common femoral; cessation of pulsations; sudden comatose condition on fourth day, and death on seventh day.

Case II, 1866 (Gignoux [6]).—First tumor on the upper part of the thigh, of the size of a child's head; second tumor above the ring of the great adductor; ligation of the external iliac; death.

Case III, 1869 (Coyley [7]).—One aneurysm above Hunter's canal and the other at about the commencement of that canal. No treatment stated. Also aneurysm of the other superficial femoral artery; gangrene of the foot; suppuration of the last-mentioned aneurysm; pneumonia; death. Also an abdominal aneurysm.

Case IV (Godwin [8]).—A man of twenty-nine years was wounded just above the knee by a pointed spike; twenty-one days afterward two aneurysmal tumors appeared; they were treated by digital pressure for fourteen hours daily for a considerable time; the tumors grew smaller and gave no inconvenience; no further treatment was thought necessary.

II. SIMULTANEOUS DOUBLE ANEURYSMS OF THE SUPERFICIAL FEMORAL AND OF THE POPLITEAL ON THE SAME SIDE.

There are three cases of simultaneous double aneurysms of the superficial femoral and of the popliteal on the same side.

Case I, 1846 (Hawkins [9]).—Femoral aneurysm five inches below Poupart's ligament; ligation of the external iliac; gangrene; death.

Case II, 1861 (Fontaine [10]).—Femoral aneurysm on the middle of the thigh; compression of the tumors by agglutinative [*sic*] compresses around the limb; cure.

Case III, 1887 (Gaston [11]).—Femoral aneurysm three inches below the pubic bone; ligation of the superficial femoral below the femoral aneurysm; cure of the popliteal aneurysm; later, ligation of the external iliac and cure of the femoral aneurysm.

III. SIMULTANEOUS DOUBLE ANEURYSM OF THE COMMON FEMORAL AND SUPERFICIAL FEMORAL ON THE SAME SIDE.

There are two cases of simultaneous double aneurysm of the common femoral and of the superficial femoral on the same side.

Case I, 1861 (Morton and McGhire [12]).—Aneurysm of the superficial femoral on the middle of the thigh; digital and mechanical compression; rupture of the lower tumor; incision of the sac; ligature above and below the aneurysm; death.

Case II, 1871 (Boughter [13]).—Compression of the common femoral; cure of the lower tumor; the upper tumor much diminished, but not cured.

IV. SIMULTANEOUS DOUBLE ANEURYSM OF THE COMMON FEMORAL AND OF THE POPLITEAL ON THE SAME SIDE.

There are five cases of simultaneous double aneurysm of common femoral and of the popliteal on the same side.

Case 1, 1771 (Donald Munro [14]).—One inguinal aneurysm, one popliteal; rupture of the popliteal; application of the tourniquet; increase of the upper aneurysm; removal of the tourniquet; hæmorrhage; death.

Case II, 1853 (Walton [15]).—Rupture of the popliteal aneurysm; amputation proposed but rejected; death.

Case III, 1854 (Solly [16]).—Ligature of the external iliac; cessation of pulsations; return of pulsations in both aneurysms; secondary hæmorrhage at the point of ligation; final cure.

Case IV, 1874 (Diver [17]).—Ligature of the external iliac; gangrene; amputation; recovery.

Case V, 1893 (Ensor [18]).—Aneurysm in the groin, of the size of a large egg; popliteal, of the size of a cocoanut; ligature of the external iliac; cure.

Case VI, 1895 (Thomas Bryant [19], of London).—A man, aged seventy-five years; ligation of the right external iliac, high up; cure. The man died during the following year from an aneurysm of the left iliac artery.

The following tables of all these cases will assist in grouping the salient points of each case:

Table A.—*Simultaneous Double Aneurysm of the Superficial Femoral, on the Same Side.*

No. of case.	Date.	Name of surgeon.	Situation of aneurysm.	Treatment.	Complications.	Results.	Remarks.	References.
1	1863	Damaschino.	First, middle of thigh; second, close to the first.	Ligature of common femoral.	Cerebral symptoms.	Death.	Traumatic cause.	*Bull. de la Société anatomique*, Paris, 1863, xxxviii, p. 438.
2	1866	Gignoux.	First, upper part of thigh, child's head; second, above the ring of great adductor.	Ligature of external iliac.	....	Death.	....	*Gazette médicale*, Lyons, 1866, xviii.
3	1869	Coyley.	First, above Hunter's canal; second, at beginning of Hunter's canal.	No treatment stated.	Also aneurysm of right superficial femoral; suppuration of that aneurysm.	Death.	Also an abdominal aneurysm.	*Transactions of the Pathological Society*, London, 1869, xx, p. 114.
4	1888	Godwin.	First, above the knee; second, close to first.	Digital compression.	....	Cure.	Traumatic.	*Boston Medical and Surgical Journal*, 1888; and Sajous's *Annual*, 1888, iii, p. 225.
5	1895	Souchon.	First, at apex of Scarpa's triangle; second, at ring of abductor.	Ligature of superficial femoral.	Secondary hæmorrhages; ligation in wound.	Cure.	Cure of lower aneurysm on first ligation; upper aneurysm cured only after ligation in wound for the secondary hæmorrhage.	*Inaugural Thesis*, American Surgical Association, New York, May 28, 1875.

Table B.—*Simultaneous Double Aneurysm of the Superficial Femoral and Popliteal, on the Same Side.*

1	1846	Hawkins.	Femoral aneurysm, five inches below Poupart's ligament.	Ligature of external iliac.	Gangrene.	Death.	....	*Lancet*, 1846, ii, p. 90.
2	1861	Fontaine.	Femoral aneurysm, middle of thigh.	Compression with bandage around the tumors.	....	Cure.	....	*Gazette des hôpitaux*, Paris, 1861, xxxiv, p. 263.
3	1837	Gaston.	Femoral aneurysm, three inches below the pubic bone.	Ligature of superficial femoral below femoral aneurysm.	Increase of upper aneurysm.	Cure of popliteal aneurysm.	Later, ligature of external iliac; cure.	*Southern Medical Record*, Atlanta, 1887; *Gaillard's Journal*, 1887, for full account.

Table C.—*Simultaneous Double Aneurysm of the Common Femoral and Superficial Femoral, on the Same Side.*

1	1861	Morton.	Femoral aneurysm, in middle of the thigh.	Incision and ligation above.	Rupture of sac of femoral aneurysm.	Death.	....	*Glasgow Medical Journal*, 1860–'61, viii, p. 450.
2	1871	Boughter.	....	Compression of common femoral.	....	Cure of lower tumor.	Upper tumor not cured.	*Philadelphia Medical Times*, 1871, ii, p. 7.

Table D.—*Simultaneous Double Aneurysm of the Common Femoral and of Popliteal, on the Same Side.*

1	1771	Munro.		Tourniquet for.	Rupture of popliteal aneurysm; increase of upper aneurysm; removal of tourniquet; hæmorrhage.	Death.		*Essays, Physical and Literary*, 1771, iii, p. 184; also Gillette, in Dechambre's *Dictionary*, article, Artère crurale, 1879, p. 666.
2	1853	Walton.		None. Amputation proposed (but patient refused).	Popliteal aneurysm had ruptured.	Death.		*Transactions of the Pathological Society*, London, 1853, i, p. 54.
3	1854	Solly.		Ligature of external iliac.	Return of pulsation in both aneurysms.	Cure.		*Lancet*, 1854, i, p. 533.
4	1874	Diver.		Ligature of external iliac; amputation for gangrene.	Gangrene had occurred.	Cure.		*Ibid.*, 1874, i, p. 509.
5	1893	Ensor.		Ligature of external iliac.		Cure.		*Ibid.*, 1893, ii, p. 27.
6	1895	Bryant.		Ligature of external iliac.		Cure.		Private communication to writer.

Almost all the cases in which an operation was performed were complicated and troublesome. Two cases only were traumatic (Damaschino, Munro). Of the four cases of double aneurysm of the superficial femoral alone on the same side, one patient was cured without operation (Godwin); three were operated upon, but only one was saved (Souchon); the two others died, one from the ligation of the external iliac (Gignoux), and the other, in whom the common femoral was ligated, from some intercurrent complication not connected apparently with the aneurysm (Damaschino).

Of the three cases of double aneurysm of the superficial femoral and of the popliteal simultaneously on the same side, one patient was cured without operative procedure (Fontaine), and one died from ligation of the external iliac (Hawkins); in one case the lower aneurysm was cured by ligation of the superficial femoral, but the upper one was only cured after ligation of the external iliac (Gaston).

If we consider the double aneurysm of the superficial femoral alone and the double aneurysm of the superficial femoral and popliteal simultaneously as cases of the same kind, which I think they are practically, then we have in all eight cases, of which one was not treated (Coyley), two patients were cured without surgical operation (Godwin and Fontaine), one required two separate operations to be cured (Gaston), while three died, one from intercurrent disease not connected apparently with the aneurysm (Damaschino), the two others from the effects of ligature of the external iliac (Hawkins, Gignoux).

My case stands the first and only case on record of cure by ligation alone. It stands the only case of double aneurysm of the superficial femoral alone ever cured by any operative measure.

Considering the treatment applied and the results, we find: No treatment stated and no result mentioned, one case (Coyley). Compression by adhesive compresses, one case; cured (Fontaine). Digital compression, one case; cured (Godwin). Ligation of femoral between the two tumors; cure of lower tumor, increase of the upper tumor; later, however, ligation of the external iliac and cure of the upper tumor (Gaston). Ligation of the femoral above the upper tumor, one case; cured (Souchon). Ligation of the common femoral; death from intercurrent complications (Damaschino). Ligation of the external iliac, two cases; both patients died (Gignoux and Hawkins).

If we now study the cases of simultaneous double aneurysm of the common femoral and of the superficial femoral on the same side, or of the common femoral and popliteal on the same side, we have eight cases, in which four of the patients were cured (Solly, Diver, Enson, Bryant) by ligation of the external iliac; one of these had to undergo amputation for gangrene (Diver); in one there was partial failure to cure also the upper tumor by compression alone (Boughter); three died, one from rupture of the lower tumor with ligature above and below (Morton), the other from rupture of the lower aneurysm, amputation being declined (Walton); the third from rupture and hæmorrhage (Munro).

Let us now consider the results of the ligation of the external iliac: In cases of double aneurysm of the superficial femoral and of the superficial femoral and popliteal, it was ligated twice (Gignoux, Hawkins) and both patients died.

In cases of double aneurysm of the common femoral and superficial femoral and of those of the common femoral and of the popliteal, it was ligated four times (Solly, Diver, Enson, Bryant) and the patients all recovered; however, the leg of one patient had to be amputated for gangrene (Diver).

The comparatively good results from ligation of the external iliac may be explained by the fact that the presence of the aneurysm on the common femoral being somewhat an obstacle to the unbroken course of the blood, formed or caused the development of the collateral circulation through the ischiadic and obturator with the deep femoral, so that when the external iliac was ligated the parts beyond were more quickly supplied than when the external iliac was ligated for an aneurysm in the course of the superficial femoral.

There is, therefore, as regards ligation of the external iliac, an important clinical distinction to make between aneurysms of the common femoral and those of the superficial femoral, or between aneurysms situated below and those above the origin of the deep femoral.

Considering the treatment applied and the results in all the cases of simultaneous double aneurysm of the common femoral and of the superficial femoral on the same side, or of the common femoral and popliteal on the same side—*i. e.*, all the cases where the upper tumor is situated above the deep femoral artery—we find: Two cases of rupture of the lower aneurysm (Walton and Morton), both patients died; one rejected amputation (Walton), and in the other (Morton) the artery was ligated above and below. Three ligations of the external iliac, cured without accident (Solly, Enson, Bryant). One ligature of external iliac, with gangrene and amputation, cured (Diver). Dr. Gaston's mode of treatment in two sittings is worthy of special notice. It was really treating the upper aneurysm after the method of Brasdor; very probably the first ligation favored the development of the collateral circulation. In one case ligature above and below the tumor was applied (for suppuration of the sac); the patient died (Morton). In one case the lower tumor was cured, but the upper tumor persisted (Boughter). In one case neither tumor was permanently cured by ligation (Solly). In one case suppuration of the lower tumor occurred and the artery was ligated above and below; the patient died (Morton—same case as above). In one case secondary hæmorrhage at the point of ligature occurred; the patient was finally cured (Solly). In two cases gangrene from ligature of the external iliac took place; one patient died (Hawkins), and the leg of one was amputated and he recovered (Diver). In one case compression was practised on the tumors and the patient was cured (Fontaine). Of two cases of compression on the artery, digital and mechanical, one failed (Morton), in the other it cured the lower tumor only (Boughter).

The complications which occurred were:

Cerebral symptoms, one case (Damaschino).

Suppuration of the aneurysm on the other limb, one case (Coyley).

Secondary hæmorrhage, two cases (Souchon, Solly).

Gangrene, two cases (Hawkins, Diver).

Increase of the upper aneurysm, one case (Gaston).

Rupture of the aneurysm, three cases (Morton, Munro, Walton).

Return of pulsations, three cases (Souchon, Boughter, Solly).

In several cases there were also aneurysms of the other arteries; in my case there was no other aneurysm.

Final Recapitulation.—Altogether sixteen cases of double aneurysm on the same side. Eight cured (Godwin, Souchon, Fontaine, Gaston, Solly, Diver, Enson, Bryant). Of the eight cured, two were cured without operation (Godwin, Fontaine), one was also partially cured without operation (Boughter). Of the five patients cured by operation, one submitted to amputation (Diver). Seven died (Damaschino, Gignoux, Coyley, Hawkins, Morton, Munro, Walton). In one there was failure to cure the upper tumor (Boughter).

Below the profunda, eight cases: four patients cured (Godwin, Souchon, Fontaine, Gaston); four died (Damaschino, Gignoux, Coyley, Hawkins).

Above the profunda, eight cases: four cured (Solly, Diver, Enson, Bryant). One patient subjected to amputation (Diver). Three died (Morton, Munro, Walton). One failed partially (Boughter).

Abstracts from Authorities.—Upon searching through the various authorities within my reach, I have gleaned the following facts bearing upon our subject, which carry their lessons with them. The two quotations below from Erichsen and Gross are all the references I have been able to find to double aneurysm:

"Aneurysms occasionally take place in the groin and ham of the same side; here the ligation of the external iliac will cure both tumors.

"Of four cases it succeeded in three, one dying of gangrene.

"In two of these cases in which the patients recovered, pulsation returned in the original aneurysm, but disappeared after a time" (20).

Gross (21) says "it occasionally happens that the femoral artery has two aneurysms."

Regarding the frequency of the disease, Crisp (22) affirms that aneurysms of the thigh are much rarer, one to three.

Erichsen (23) says that aneurysms affecting the groin are by no means infrequent.

Gross (24) mentions also that he never has seen an instance of spontaneous aneurysm in the lower third of the thigh, and general experience concurs in admitting that such an occurrence is extremely uncommon.

Vidal de Cassis (25) states that aneurysms of Hunter's canal are very rare, because of the presence of the strong fibrous sheath.

Although the following remark of Erichsen's (26) has no immediate application to such cases as we have under study, yet it carries an invaluable idea which we should remember when the sac ruptures:

"In the diffused traumatic aneurysms—*i. e.*, in ruptured artery where there is no sac, properly speaking—it is doubtful whether there is a case on record in which the Hunterian operation for aneurysm has not terminated in danger and death to the patient and disappointment to the surgeon."

Erichsen (27) recalls the sensible rule that we should not ligate if compression on the artery stops all pulsations in all the arteries beyond, lest gangrene should follow. He also says that in cases where there is no pulsation in the vessels beyond the aneurysm it is useless to attempt ligation on the distal side.

There are points applying to the ligation of the external iliac.

Erichsen (28) dogmatically asserts that it may be laid down as a rule in surgery that in all those cases of aneurysm situated in the upper part of the thigh in which compression has failed, and sufficient space does not intervene between the origin of the deep femoral and the upper part of the sac for the application of a ligature to the superficial femoral, the external iliac should be tied. However, asepsis and catgut ligatures without rupturing the coats may alter this (writer).

Gross (29) states that ligation of the external iliac is generally reported as a much safer operation than ligation of the common femoral.

According to Holmes (30), the mortality in ligature of the external iliac exceeds that of amputation of the thigh.

The statement of Ashhurst (31) is that the ligature of the external iliac alone for aneurysm gives a mortality of thirty-nine per cent.

Norris and Cutler's (32) tables show that out of one hundred and forty-three cases of ligature of the external iliac for all aneurysms, forty-seven patients died, seventeen of gangrene and nine of hæmorrhage.

Ashhurst (33) holds that ligature of the common femoral is attended with more risk than ligature of the external iliac.

According to Erichsen (34), in Ireland ligation of the common femoral was performed nine times, with six recoveries and three deaths, for wounds and for aneurysms. In the American civil war it was performed eighteen times with only four recoveries. Barwell says that in thirty-one cases in which this artery was tied for aneurysm hæmorrhage occurred in eighteen, and twelve patients died.

In explanation, Holmes (35) writes that the reason of the supposed danger of ligation of the common femoral is the proximity of the ligature to the large branches. Another reason is the probability of gangrene in consequence of the vessel being blocked up above the origin of the great nutrient arteries of the limb.

Rabe's (36) table shows that death from gangrene after ligature of the common femoral is eighteen per cent. As for the risk from hæmorrhage after ligation of the common femoral, it is thirty-nine per cent. (37).

According to Poulet and Bousquet (38), in high aneurysms of the superficial femoral and those of the common femoral, out of sixty-seven cases of ligation of the external iliac, forty-two patients recovered; death-rate, sixteen per cent.

Ashhurst (39) makes the statement that ligation of the external iliac gives a mortality of twenty-two per cent. The mortality from gangrene in ligation of the external iliac is eleven per cent. (40). Ashhurst (41) also says that after ligation of the external iliac the risk from hæmorrhage is fifteen per cent. Dr. J. T. Williams (42) reports a successful case of double ligature of the external iliac with section of the artery between the ligatures for upper femoral aneurysm. Erichsen (43) contends that the ligature of the superficial femoral is attended with more success than that of any of the larger trunks. Ashhurst (44) remarks that ligation of the superficial femoral appears to be a more successful operation when performed for femoral than for popliteal aneurysm, the reason being that the risk of gangrene from venous congestion is much greater in the latter than in the former. Crisp's (45) tables show that the mortality after ligation of the superficial femoral for femoral and popliteal aneurysms is twenty-two per cent., or one in four and a half. Syme, however, tied the femoral thirty-five times with only one death (46). Norris (47) states that in twenty-two cases of ligature of the superficial femoral for femoral aneurysm there was only one death from hæmorrhage. In one hundred and fifty-four ligatures of the superficial femoral for popliteal aneurysms there were thirty-nine deaths, of which nineteen were from gangrene.

Dr. J. T. Williams (48) reports also a successful case of double ligature of the superficial femoral with section of the artery between the ligatures for popliteal aneurysm. He believes the relief of tension insures the rapidity of repair and prevents recurrent secondary bleeding.

Erichsen (49) very pithily says that the occurrence of secondary hæmorrhage after ligature of the superficial femoral is a troublesome accident and one in which the surgeon, to use Fergusson's expression, will assuredly find himself in an eventful dilemma, and in which it is necessary that his line of action should have been considered well beforehand, as he may not have much time to spare for reflection when such an event takes place. In cases of this kind four lines of treatment present themselves—viz., the employment of pressure, ligature of the vessels at a higher point, ligature of the bleeding artery in the wound, and amputation of the limb.

Holmes (50) makes the statement that in recurrent aneurysms of the lower extremities it is best to tie the artery below the ligature already applied, between it and the sac, whereas in the upper extremity it is best to open the sac and tie the ends.

We must bear in mind that all the figures given above are of the preaseptic period. Asepsis improves them very much (writer).

Rose (51), in a case of aneurysm of the high superficial femoral and of the common femoral, extirpated the sac, and, although the vein was opened, the patient recovered. Poulet and Bousquet (52) say that in eight cases the sac was incised and the vessel ligated above and below, with one death. That is the best treatment, because the ligature of the external iliac numbers many failures, has a high mortality, and exposes the patient to ventral hernia. Kubler (53) thinks extirpation of the sac of peripheral aneurysms is the most rational and certain and the least dangerous method, in spite of the undoubted difficulty of the operation. Out of forty cases thirty-nine were completely successful. In extirpating the sac, the valuable use of the provisional loop ligature must not be forgotten.

Appendix.

I append here several cases of triple and of quadruple aneurysm which were discovered in my researches.

SIMULTANEOUS TRIPLE ANEURYSM OF THE EXTERNAL ILIAC, THE FEMORALS, AND THE POPLITEAL ON THE SAME SIDE.

Case I, 1862.—George Lowe (54) mentions a case of a man with three aneurysms on the same left lower limb—one ilio-femoral as large as a chestnut, one on the femoral as large as a turkey's egg, one on the popliteal as large as a hen's egg. The femoral aneurysm ruptured spontaneously and the thigh was amputated, leaving the ilio-femoral aneurysm in the stump. After healing of the amputation, compression on the external iliac cured the ilio-femoral aneurysm.

Case II, 1870 (McLeod [55]).—On the right side: Two aneurysms high up between Poupart's ligament and the upper limit of the second or lower one, which was a diffused aneurysm at Hunter's canal; amputation above the lower aneurysm; cure. The higher aneurysms became rapidly consolidated and one was quite absorbed before the patient left the hospital. On the left side: One aneurysm on left external iliac and two on femoral.

Case III, 1876.—Pemberton (56) relates the history of a case of triple simultaneous aneurysm of the left common femoral, of the superficial femoral (at the apex of Scarpa's triangle), and of the popliteal on the same side. A man, aged forty-eight years; ligature of external iliac with a catgut aseptic ligature prepared by Lister himself; suppuration at the site of the ligature; the immediate result of the operation was that all pulsations ceased in the three aneurysms and never returned. The circulation in the main artery, extending from the seat of the ligature below the bifurcation of the common iliac to a little above the origin of the anterior and posterior tibials, was arrested at four different points by absolute barriers to the circulation by one ligature and three solid aneurysms. Dry gangrene set in on the second day, but was not definitely limited before three months after the operation; it extended to the middle of the leg.

Case IV, 1892 (Hulke, No. 1 [57]). *Simultaneous Triple Aneurysm on the Left Side.*—A man, aged seventy-three years. On the right iliac slight bulging; right femoral and right popliteal. Also double aneurysm of the left popliteal; aneurysm of the left femoral. No treatment mentioned; no result stated.

Case V, 1894 (Hulke, No. 2 [58]).—An aneurysm in each external iliac, femoral, and popliteal (a seventh in the aorta). He died of rupture of the aortic aneurysm.

Simultaneous Triple Aneurysm of the External Iliac, the Femoral, and the Popliteal, on the Same Side.

No. of case.	Date.	Name of surgeon.	Situation of aneurysm.	Treatment.	Complications.	Results.	Remarks.	References.
1	1862	Lowe.	One ilio-femoral, one superficial femoral, and one popliteal.	Amputation for.	Rupture of the femoral aneurysm.	Cure.	The ilio-femoral aneurysm was left in the stump; compression of the external iliac cured the ilio-femoral aneurysm.	*Gazette hebdomadaire*, 1862, from *Medical Times and Gazette*, 1862, p. 385.
2	1870	McLeod.	Two tumors below Poupart's ligament, one at Hunter's canal, diffused.	Amputation above lower aneurysm.		Cure.	Also two aneurysms on left femoral and one on left external iliac; the higher aneurysm became consolidated.	*Glasgow Medical Journal*, 1870, iv, p. 328.
3	1876	Pemberton.	Common femoral, superficial femoral at apex of Scarpa's triangle, and popliteal.	Ligature of external iliac.	Gangrene up to middle of leg.	Cure.		*Lancet*, 1876, i, 212; *ibid.*, 1877, iii, p. 114; also Dechambre's *Dictionary*, article, Artère crurale, 1879, p. 726.
4	1892	Hulke. (No. 1.)	Right external iliac, right femoral, right popliteal.				Also an aneurysm of left femoral and double aneurysm of left popliteal.	*International Medical Magazine*, Philadelphia, December, 1892; also Sajous's *Annual*, 1894, iii, k. 7.
5	1894	Hulke. (No. 2.)	External iliac, femoral, popliteal.		Rupture of an aortic aneurysm.	Death.	Aneurysm of aorta and aneurysm of popliteal on the other side.	*Ibid.*

SIMULTANEOUS QUADRUPLE ANEURYSM OF THE EXTERNAL ILIAC, THE FEMORAL, AND THE POPLITEAL ON THE SAME SIDE.

Case I.—Scarpa (59), quoted by John Parker, reports four aneurysms of the right femoral; one on the groin, two below the deep femoral, and one at the ring of the great adductor.

Case II.—Donald Munro (60) describes four fusiform aneurysms on the same lower limb; one on the end of the external iliac, two on the femoral, and one on the popliteal.

Simultaneous Quadruple Aneurysm on the External Iliac, the Femorals, and the Popliteal, on the Same Side.

1	.....	Scarpa.	Common femoral' two on superficial femoral, one at the ring of the great adductor.					Scarpa, quoted by John Parker; also Gillette, in Dechambre's *Dictionnaire*, article, Artère crurale, 1879, p. 666.
2	1771	Munro.	One on end of external iliac, two on femoral, one on popliteal.					Lefort, in Dechambre's *Dictionnaire*, 1866, article, Anévrisme, p. 536.

Post-Scriptum.—The two following most interesting cases came to my knowledge too late to be incorporated in the tables and deductions, but they speak eloquently for themselves:

I. S. Duplay (61), of Paris, reports a case of simultaneous double aneurysm of the superficial femoral (about the middle third) and of the popliteal, on the same side; elastic compression after Reid's method; cure. Six years later the same patient returned with about the same aneurysms on the opposite limb; elastic compression was applied, but failed; ligature of the superficial femoral at the apex of Scarpa's triangle; cure.

II. Brown (62) reports the case of a woman, aged forty-three years, affected with simultaneous double aneurysm of the right limb. The upper aneurysm, of the size of a cocoanut, extended above Poupart's ligament, and was on the verge of rupturing; the second or lower aneurysm was in the middle third of the superficial femoral. On account of the high position of the first aneurysm, which prevented any of the usual operations being performed, transperitoneal ligation of the external iliac was decided upon, in Trendelenburg's posture; the abdominal wound did well, but gangrene of the leg necessitated amputation, and the patient died two months and a half later. Brown thinks that the transperitoneal method is the one to be generally adopted.

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EQUITATION AND BICYCLING

CONSIDERED AS CHARMING, GRACEFUL, AND HEALTHFUL EXERCISES, AS WELL AS VALUABLE REMEDIES IN THE TREATMENT OF SOME CHRONIC AFFECTIONS.

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THE interesting and highly exciting subject of bicycle riding and its effects has of course attracted the attention of the medical profession, as is evidenced by the abundance of the literature already extant upon it; it being a legitimate subject, and one well worthy to come under their cognizance and investigation.

With this good example before him, the writer will on this occasion endeavor to present and compare the claims of equitation and bicycling, with regard to their value and importance in affording pleasure and health, as well as remedies in the cure, the palliation, and prevention of some diseases. But before proceeding to the main point, he will first, by way of introduction, briefly observe that the present is a very remarkable era of invention, innovation, and revolution in almost every department of life, the possibilities and the consequences of which who can calculate? It was within this revolutionary period that the revolving bicycle was conceived and invented and came forth like magic, to strike us with wonder and amazement at its sudden rise and great popularity, and at its immense train, too, of enthusiastic admirers, who all declare that the bicycle has come to stay, having been taken and adopted, as a life partner is, for better, for worse; but it is yet too soon to determine positively which; it is too early to pass judgment upon the merits, the benefits, or the injuries due to bicycling. But, be this as it may, bicycle riding is, nevertheless, a most agreeable, fascinating, and healthful exercise, if it is employed with a knowledge of its science, with prudence, with moderation, and on a suitable saddle; and it is especially adapted to the fair sex, who worship their idol the bicycle as the "heavenly twins."

The Bicycle Saddle and the Rider's Posture on It.—The ordinary bicycle saddle, as now in use, so far as the writer has observed, is simply pernicious, especially as it regards the female rider. The saddle is entirely too narrow for the peculiarly wide female pelvis, and thus fails to come in coaptation with the tuber ischii, which is highly important it should, and therefore signally fails to give sufficient support to the body, and the consequence is, that the principal support and pressure are thrown upon the naturally soft, sensitive, and highly excitable parts of the pudendal region, where they inflict, by their constant pressure, irritation, and stimulation, both physical and moral injury. It is therefore devoutly to be hoped that a saddle exactly adapted to the anatomy of the female pelvis will speedily be produced.

The posture of the bicycle rider upon the saddle should always be erect. The stooping posture, like that of the race-horse jockey, which is so common, is generally acquired while taking the first lessons on the bicycle, and afterward becomes a habit. Such a posture is highly injurious as well as ungraceful, awkward, and undignified; especially as there is nothing whatever in the construction of the bicycle itself to prevent the rider from adopting the erect and healthful, instead of the stooping and hurtful, posture. The writer has, however, noticed that the lady bicyclers generally ride erect, which adds to their health, grace, and beauty.

Is the Effect of Equitation or Bicycling Aphrodisiacal?—It is a well-known fact that horseback or bicycle riding tends decidedly to provoke the sexual desire; it certainly acts more or less as a sexual excitant, according to the temperament of the rider. When this exercise is taken in moderation, as it always should be, no bad result will follow, but on the contrary it may even tend to prevent premature impotence in men and sterility in women. But when equitation or bicycling is abused or indulged in immoderately or excessively, it tends to extinguish the venereal desire, and may result in early impotence in men and sterility in the opposite sex.

So far as equitation is concerned, the ancients were not ignorant of its decided aphrodisiacal effect, and speak of excessive horseback riding as productive of impotence in men. Hippocrates, when speaking of the Scythians, says: "Many of the men by constant equitation become impotent, being unfit for the act of generation or for the battles of Venus"; and he further says, from their perpetual riding on horseback with their legs hanging down, they were of necessity subject to fluxions to those depending parts, resulting in swellings, pains, lameness, and dragging of the limbs, as the disease advances (*De Aere, locis et aquis liber.* Foes, tom. i, p. 281).

It must, however, be distinctly understood here that Hippocrates means that constant horseback riding is injurious, for the writer will show hereafter that Hippocrates approves of equitation when properly taken, both as a healthful and a curative remedy in some diseases. He does not intimate that the effects of equitation, if taken in moderation, are not aphrodisiacal, but the inference which might be taken from what he says is that they are.

From the description which Hippocrates gives of the manner in which the men of Scythia rode on horseback it is evident that stirrups were neither known nor used by the ancients; hence for the want of stirrups, or something else to give support and to sustain the feet in their depending position, the fluxions to those parts, with the bad results following, were a necessary consequence.

Hippocrates further says that "among the Scythians are the Sarmatians, a race different from all others, whose females ride on horseback, draw the bow, shoot their arrows, and throw the javelin while on their steeds, thus fighting their enemies while they are yet virgins; nor do they lose their virginity until they have killed three of them," etc. (*op. cit.*).

Van Swieten agrees with Hippocrates that inordinate horseback riding tends to impotence in men (*Commentaria in Hermanni Boerhaave Aphorismos de cognoscendis et curandis morbis*, section 1063, 4to, Lugduni-Batavorum, 1785).

Aristotle maintained that the effects of equitation were decidedly aphrodisiacal (*Philosophorum medicorumque problemata*, Prob. iv, sec. 12, 12mo, Londini, 1583).

Moderate horseback and bicycle riding certainly tend to stimulate the sexual desire, while immoderate equitation and bicycling tend to extinguish it. This is the rule.

Equitation.—There is no form of exercise more attractive and more sanative than equitation, if indulged in prudently. But bicycling and the bicycle are now the popular craze, and play a most important part in almost everything; indeed, since this craze began the saddle horse is scarcely ever mentioned, and equitation is out of the question; but the writer is not disposed or willing to abandon either without some kind words of commendation. Now, as regards the writer's experience of the horse and horsemanship, he in early life was almost constantly on horseback either for pleasure or on business, and then residing in the southern portion of our country, where the breeding of thoroughbred horses is a specialty, and where they abound, he naturally became familiar with the horse and strongly attached to him, and also to that admirable exercise which he affords. But the bicycle is now presented to us as the great rival of and substitute for that most noble, assiduous, and intelligent of all animals, the horse, which has come down to us from the remotest ages, but which is now destined to be driven to the shambles, and there to be converted by the sordid horse butchers into cheap food for the gratification of an abnormal and depraved appetite by a species of creatures who are but a shade above cannibals.

The writer will, in the further course of his remarks in comparing horseback and bicycle riding as remedial measures, repeat some of the observations he made and published in the *Medical Record* several years ago, under the head Equitation as a Cause, a Preventive, and a Cure of the Hæmorrhoidal Disease.

Bicycle riding as a remedy for some diseases is founded somewhat upon the same principle as that of horseback riding, and, like it, affords an agreeable method of exercise in the open air, and also tends to the cure, the alleviation, or the prevention of some chronic affections both in the male and in the female; in the latter, such as amenorrhœa, dysmenorrhœa, insomnia, melancholia, and all nervous and functional complaints. But while bicycle riding is so much more accessible to the largest majority of invalids, being the least expensive of all known methods of locomotion ever devised, it, nevertheless, falls far short of being as efficacious as horse exercise. The great antiquity of equitation for the alleviation and the cure of some chronic affections is attested by Hippocrates himself, who flourished four centuries before the birth of Christ, and who recommended and prescribed horseback riding, even at full gallop in the open fields, as a remedy in some chronic diseases (*De Ratione victus in morbis acutis liber*, *Hippocratis Opera omnia Græcè et Latinè, ab Anutio Foësio*, tom. i, p. 406, folio, Genevæ, 1657).

Oribasius, who relied so much upon other gymnastic exercises as remedial measures in the treatment of some diseases, passes the highest encomium upon equitation. After declaring that riding slowly is tiresome, he goes on to say that when a horse is put on the stretch, though he violently shakes the whole body, yet this concussion is beneficial, for it strengthens the entire system, especially the stomach, and it purges and quickens the organs of sense beyond all other exercises (*Collectorum medicinalium*, lib. vi, cap. 24, Equitatione, folio, Basileæ, 1557).

Some of the most valuable effects of equitation, as described by Oribasius, can not, for obvious reasons, be obtained or experienced from bicycle riding.

The Latin writers, as well as the Greek, also allude to horseback riding as a therapeutic measure in the treatment of disease. The Romans, however, although they exceeded the Greeks in their admiration and prosecution of gymnastic exercises, generally fell greatly behind the Greeks in their attention to and recommendation of horseback riding as a remedial measure. The celebrated Roman, Baglivi, however, was one of its greatest admirers, and speaks of having cured two hypochondriacal patients who were desperately ill, by causing them to ride in the country on asses (*Specimen de fibra motrice*, lib. i, cap. 8. In *Opera omnia, medico-practica et anatomica*, 8vo, Lugduni, 1710).

As an evidence that the Italians, excepting the military, were at an early period not very much addicted to horsemanship, and especially to fast riding, a proverb of theirs says: "A galloping horse is an open sepulchre." In consequence of this established principle or opinion, as it were, of theirs, they conducted their races at Florence by running the horses without riders upon them. And as a further evidence of the timidity of the Romans, which kept them in those days from the enjoyment and benefit of the best and most useful kind of riding, the writer will refer to some of the sayings of that celebrated poet, physician, and philosopher Martial, who advises his friend Priscus, in hunting the hare, to moderate the speed of his horse; and finally warns all hunters of that animal to beware of fast riding lest they break their necks instead of killing the hare (*Epigrammatum medicæ aut philosophicæ*, lib. xii, epig. 14, 4to, Venetiis, 1657).

It may be remarked here that some of the enthusiastic bicyclers now, like the timid Romans of that early day, are urging the strongest objections to horseback riding on account, they say, of its great danger; but it may be asked, Is there no danger, no hazard, attending bicycle riding? Are the casualties consequent upon it any less numerous? Mr. Fuller says: "The exercise of horseback riding upon several accounts may be esteemed the best and noblest of all exercises for a sick person, whether we consider it with respect to the body or the mind. If we inquire after what manner it affects the body, we shall find that it is a kind of mixed exercise, partly active and partly passive; the lower parts of the body being in some measure employed, while the upper parts are almost wholly remiss or relaxed. Nay, where a man is easy, is sure of his horse, and rides loose, there is very little action on his part; but he may give himself to be as careless almost as if he were seated on a moving chair, so that he may be said to be exercised rather than to exercise himself, which makes the case widely different from almost all other sorts of exercise, as walking, running, stooping, or the like, all of which require some labor, and consequently more strength for their performance" (*Medicina gymnastica*, p. 140, 8vo, London, 1740). From what Mr. Fuller truly says of the ease, the rest, and the comfort which equitation yields the invalid, it will at once be perceived that bicycling can not afford such; and furthermore, it requires much more strength and labor in propelling the bicycle in bicycle riding than are required in horseback riding.

The writer will here, by way of digression, observe that anciently, at different periods, and for a longer or shorter time, horses were managed by the voice alone or by the switch, without either bridle, saddle, or stirrups. For saddles they sometimes used skins of animals or cloth. Even the aborigines of our own country not long since rode and managed their horses in the same manner, if some of them do not even now do it. Saddles when first made were without pommels; and the ladies are especially indebted to the celebrated Catherine de Medici for the introduction of the pommel on their saddles. Previous to her time female equitation was conducted *à la planchette*. According to the distinguished Abbé Brantôme, Catherine de Medici was the most perfect and accomplished horsewoman of the age in which she lived, and he says that she introduced the pommel on the lady's saddle for the better display of her unequaled symmetry of person.

The writer will here give the names of a few ladies among the royal families of Europe who are at present all superb horseback riders and skilled in horsemanship, such as the Empress of Austria and her sister-in law, the Archduchess Marie Therèse, Queen Henriette of Belgium, ex-Queen Marie of Naples, Princess Isabella of Spain, and the Marchioness of Lorne.

The Science and Art of Equitation.—Equitation is a passive-active exercise, and differs materially as to whether the horseman rides according to the French or the English fashion, so distinguished. The French rider, with long stirrups and only the ball of the foot resting in them, sits firmly on the saddle, with his nates and the saddle in close and constant contact, as if he were part of the horse himself, by which it will be observed the whole pelvis is the principal *point d'appui*, so that the motions of the horse are imparted to the trunk, and the shocks and vibrations occasioned by them act more forcibly upon the abdominal viscera. The muscles that are principally engaged in this active movement are those of the trunk and inner sides of the thighs.

The able writer on horsemanship, Mr. R. Berenger, Esq., of London, more than a century ago made the following very pertinent remarks upon this subject, which may be fairly interpreted as having especial reference in part to the so-called French custom of equitation. He says: "The Centaur is the symbol of horsemanship, and explains its meaning as soon as it is beheld; for there is such an intelligence and harmony between the rider and the horse that they almost, in a literal sense, may be said to be one creature. The horse understanding the aids and aims of his rider as if he were a part of himself, and the writer equally consulting the genius, powers, and temper of the horse, justifies the allegory, and which may almost be said in the expressive words of Shakespeare in Hamlet (act iv, scene vii), as follows:

> "KING. . . . Two months since,
> Here was a gentleman of Normandy,—
> I have seen myself, and served against the French,
> And they can well on horseback: but this gallant
> Had witchcraft in it; he grew into his seat;
> And to such wondrous doing brought his horse,
> As he had been incorpsed and demi-natured
> With the brave beast," etc.*

Now, it will be observed that, on the contrary, the English rider with short stirrups, and the instep of the foot resting in them, does not sit closely and firmly on the saddle, but makes the stirrups serve him as *points d'appui*, in consequence of which his body is therefore raised at every movement of the horse, because the nates are unsupported, and by reason of this he is constantly compelled to exert himself in more active movements in order to maintain his upright position. It is true he may have the advantage, if it really is an advantage, of more effectually opposing the shocks occasioned by the motion of the horse, and longer warding off the fatigue which they induce; but are not these very efforts which he is continually compelled to make to keep his erect posture almost if not equally tiresome? These two methods of riding, then, doubtless have their advantages and disadvantages as remedial measures, and must be made to conform to the exingencies of the patient's condition. For the prevention and the cure of the hæmorrhoidal disease, however, the French fashion of riding is, as a general rule, for obvious reasons the best.

After having in the preceding remarks referred to the subject of equitation as a remedy in diseases generally, the writer will now proceed to consider it especially in relation to the hæmorrhoidal disease. It was an opinion held both by the ancients and moderns that horseback riding, though valuable as a remedy in some diseases, yet it always and under all circumstances tended to the production of the hæmorrhoidal disease, and that it was especially prejudicial to those already suffering from it. This opinion or supposition, even now entertained by so many, can only, however, be accepted as true to a very limited extent. Such an opinion the writer has always considered pernicious, inasmuch as it deters many persons of sedentary habits, invalids, and others from availing themselves of this delightful and sanative exercise. It is true that violent horse exercise may prove a cause of the hæmorrhoidal disease in consequence of the irritation and chafing which it occasions in the anoperineal region in those who are unaccustomed to horseback riding, or those who ride for the first time or ride a long distance in warm weather, which in such produce contusions and chafings which more or less tend to the production of the hæmorrhoidal disease. The writer will here further remark that riding without a saddle—that is, bareback—would also be well calculated to cause or to lay the foundation of the hæmorrhoidal disease. The effect, however, would not be due to the concussions produced by the motion of the horse, but solely to the heat given off and received from the animal in a long ride, especially in warm weather, and by the contusions and chafing of the anal region which attend this kind of equitation. The ancient Romans seemed to have been aware that horseback riding without a saddle would cause the hæmorrhoidal disease, for Martial, in his epigram entitled Ephippium, advises the coursers on this account not to ride bareback.

> "Strangula succincti venator sume veredi;
> Nam solet a nudo surgere ficus equo."

Horseback riding must therefore be taken with precaution and prudence on a good horse, and on a good saddle, by those who are acquainted with the science and art of horsemanship and accustomed to riding. If these prerequisites obtain, equitation is much more frequently a prevention or a cure of the hæmorrhoidal disease than a cause of it. The writer is well aware, however, that it under all circumstances is considered a potent cause of the disease by a large number of eminent authorities, but he must be excused, however, from naming but two of the old authors. The celebrated Trnka maintained that horseback riding is uniformly a cause of the hæmorrhoidal disease (*Historia hæmorrhoidum*, 8vo, Vindobonnæ, 1794).

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* *History and the Art of Horsemanship*, vol. i, p. 36, 4to. London, 1771.

Baldinger says that he has seen the horsemen in the army much more frequently affected with the hæmorrhoidal disease than the foot soldiers were (*Introductio in notitiam scriptorum medicinæ militaris*, 8vo, Berolini, 1764).

Now, on the contrary, however, the illustrious Baron Larrey, who was so long Surgeon in Chief of the Imperial Grand Army of France under the great Napoleon, in accordance with his vast experience, declared positively that the motion of the horse was much better calculated to cure the hæmorrhoidal disease than to cause it; that he had even seen soldiers on the eve of an engagement, and in the midst of a violent attack of the hæmorrhoidal disease, compelled to mount their horses and remain in the saddle for hours, and who, through the excitement of battle, entirely forgot their infirmity, and found themselves cured when the conflict was over. Indeed, he himself was in the habit of causing soldiers affected with the disease to ride on horseback at full gallop; and he declares that he never saw any bad effects to supervene; but generally, on the contrary, the most salutary consequences (*Mémoires de chirurgie militaire et campagne*, 8vo, Paris, 1817).

The late able and distinguished M. de Montègre says: "I do not know of a surer or a better preservative from the hæmorrhoidal affection than habitual equitation" (*Des Hémorroïdes, ou traité analytique de toutes les affections hémorroïdales*, p. 106, 8vo, Paris, 1830).

The writer being well acquainted with General H. H. Sibley, a creole of the State of Louisiana, and knowing that he had been a commanding officer in the cavalry service for the greater part of his life, wrote him a letter on the subject of equitation as a cause, a preventive, and a cure of the hæmorrhoidal disease, and asked him to give the writer his experience and opinion in relation to it. The following is an extract from his answer, dated June 4, 1882: "In regard to your inquiry relative to equitation as a *cause*, preventive, and cure of the hæmorrhoidal disease, I can speak *ex cathedra*. I entered the cavalry of the United States Army in 1838, and served throughout every climate on this continent up to 1861; again in the Confederate Army during the continuance of that war; and lastly, in Egypt, as a general officer for four years. During this period of over thirty years' almost continual service, from the tropics of Mexico to the frozen crests of the Rocky Mountains, I have never been afflicted with any disorder of the anus, nor have I ever known a soldier in the ranks thus afflicted. True, they were and needs must be entirely free from any malady on their enlistment; but surely horseback exercise never *occasioned* any malady of the anus. Among the officers, but two in my regiment were thus afflicted; one, a captain, who complained of some anal malady, but who never shirked the saddle; another, who had chronic piles, and who always shirked duty. He is still a living monument of worthlessness, though fully seventy-five years old. Thus you will perceive that my experience proves that horseback riding rather *prevents* than induces piles. Whether it tends to alleviate or to cure them, I have no knowledge or experience, never having been afflicted in this way myself; nor have I ever heard of a complaint from soldiers. I think the constant exercise, together with the regular habits and *initial* healthy condition of the cavalry soldier, preserves the healthfulness of the anal parts. It was my constant habit after a long march in the saddle to bathe the parts in a basin or in the creek, and the soldiers generally followed my example," etc.

The writer himself has witnessed the good effects of horseback exercise in several instances. Some of the patients had the disease in the form of varices in the anal region, while in others it was attended by regular organized tumors. These patients positively refused surgical treatment, and were then advised to lay aside the numerous pile nostrums they were using and try regular horse exercise for a while, which they did. The pressure of the saddle and the motion of the horse in these cases appeared to exert a most salutary influence in removing the congestion and the tumors. Indeed, the agitation of the intestines and the repeated concussions occasioned by the motion of the horse favor the free circulation of the blood through the entire abdominal cavity, and especially through the hæmorrhoidal vessels, and at the same time the inferior portion of the rectum, with all the other contiguous parts which participate in this healthful movement, receive an augmentation of tone and elasticity which are well calculated to prevent and dissipate engorgements; and, futhermore, there is scarcely anything that can assist in a more efficacious manner the action of a torpid liver than the gentle shaking motion of horseback riding, which induces a more active secretion in this organ, and absorption in the intestines by accelerating the circulation. The writer has known many planters as well as overseers of plantations in the extreme southern portion of our country, some of whom were of full habits and free livers, who appeared to be nearly half their time on horseback, and yet, as it were, knew nothing of the hæmorrhoidal disease, never having experienced an attack of it.

In the experience and opinion of the writer, horseback exercise is not prejudicial even to the hæmorrhoidarian, but, on the contrary, is just the reverse. There is not a more certain preservative from this disease than regular horseback riding. Should the patient, however, be unaccustomed to equitation, and take it in a sudden and violent manner, he will suffer severely for several hours, especially if he has external tumors, or internal ones in the least protruded. The writer would therefore advise such patient not to take this exercise if he has inflamed external hæmorrhoidal tumors or internal ones protruded, but first have the inflammation subdued and the tumors completely returned before mounting the horse. It is true that in such cases it is frequently inconvenient and a little painful at first to ride, yet, if persevered in, great and lasting relief will often be obtained, and the writer does not think that hæmorrhoidal tumors, whether external or internal, should ever contraindicate at least a trial of horse exercise by those especially who are averse to all surgical treatment, for if equitation is taken in a proper manner, carefully and prudently, it is a powerful means of preventing and curing the hæmorrhoidal disease.

The writer will now conclude by presenting the testimony of the late able and distinguished surgeon Frank H.

Hamilton, of New York, on the value of equitation as a therapeutic measure in the treatment of the hæmorrhoidal disease. This he was pleased to give in a note to the writer, dated New York, August 27, 1882, as follows:

"My dear Doctor: I have just read your very instructive paper on equitation in its relations to hæmorrhoids, contained in the last number of the *Medical Record*. If you will refer to my *Treatise on Surgery*, page 782, you will find that I have arrived at the same conclusions that you have. These conclusions were the result of a personal lifelong experience with the saddle, and were confirmed by a careful study of the subject while upon the field during the late civil war, and while acting as United States Medical Inspector of the Armies. I was myself almost constantly on the saddle, and while it is true that hæmorrhoids were not often met with either in the infantry or cavalry, it is quite certain that they were least frequent in the cavalry. I never knew a cavalryman disabled from this cause, not even among the most active raiders. I knew one excellent cavalry officer who had hæmorrhoids, but he entered the service with them, and was in no way disabled in riding by them. I thank you, my dear doctor, for your able defense of my favorite exercise, etc."

184 Centre Avenue, *September 27, 1895.*

THE IMPORTANCE OF ASEPSIS IN THE PRACTICE OF OBSTETRICS.

By ADRIAN Y. REID, M. D.

It is hardly to be expected, in the brief time allotted to the reading of this paper, that I shall elaborate, but rather suggest ideas for our profitable discussion.

Dr. Joseph D. Bryant read a paper last year before the Academy of Medicine entitled The Fallibility of Human Effort in Aseptic Surgery.

After much canvassing and agitation of my own subject, I feel very much inclined to affix a similar title to my paper—to wit, The Fallibility of Human Effort in Aseptic Midwifery.

Asepsis is legitimately restricted to the period of preparation on the part of accoucheur and attendants. *Antisepsis* begins with actual operation, implying a mild use of all drugs and other means commonly known as antiseptics and disinfectants, with which you are so familiar. Disinfection is only a more vigorous antisepsis, to be adopted when the presence of germs is manifest or suspected.

One writer aptly says: "Antisepsis is simply the means of certifying to asepsis." Since asepsis equally concerns the surgeon, I shall make no distinction between him and the obstetrician in this respect. The disposing causes to sepsis, arising from management and complication of cases, I shall have to leave to the consideration of others.

Bacteria are not modern. Hippocrates, twenty centuries ago, suspected them. Indeed, I am inclined to believe that they are as old as the human race itself. In fact, I think I believe in the bacterial origin of man—some men, at any rate, not in our profession. This is but the perfection of Darwinism. Doubtless for centuries thousands of thoughtful physicians have surmised the true bacterial origin of puerperal fever, but not one had the courage of his conviction till, in 1845, Dr. Holmes, of Boston, clearly indicated his belief, to be soon followed by a positive declaration in 1847 on the part of Dr. Semmelweis, of Vienna, who, it is painful to note, received only ridicule and scorn from his fellow-practitioners, and who unfortunately died on the very eve of a clear demonstration of his prophecy. Then begins a thorough shaking up of the subject by Pasteur, Lister, Stadfeldt, who adapted the use of carbolic acid to midwifery in 1870; Tarnier, who inaugurated bichloride of mercury in 1881; Garrigues, establishing rigid asepsis in the maternity department of Charity Hospital, Blackwell's Island, with wonderful results, reducing a fearful mortality rate from sepsis of nearly sixteen per cent. to a fraction of one per cent.

Strife and contention on this account are happily over, and the microscope has forever placed bacteriology on a firm basis. Henceforth, therefore, the discovery and classification of bacteria belong to the bacteriologist, though a fundamental knowledge of this subject, especially by the surgeon and obstetrician, is desirable.

Having run the enemy to cover, we now seek to destroy him. The science and practice of asepsis cover a wide field, originating in the principles of hygiene, implying a full understanding and application of antiseptics and disinfectants, of the nature of drugs, of heat and cold, and a knowledge and use of all such other means and methods calculated to destroy germs. And when at last asepsis fails us, as under even the best of circumstances it is sometimes sure to do, we are not yet without hope, for we can still look forward with confidence and pleasure to the coming of serum therapy. From a long and weary chase of the fell enemy of health and life, bacteria, whose synonym is death, it is to come in at the brush and bear away the trophy of success.

One writer says: "Experiments have shown that no method has yet been discovered by which the skin can be rendered absolutely sterile, and that the cutaneous glands contain, even after the most careful disinfection of the surface, micro-organisms which in a proper soil are capable of giving rise to inflammation and suppuration." Be this as it may, it certainly indicates to you and to me the extreme importance of thoroughness on our part, considering all germs—the deadly streptococci and the so-called nonpathogenic bacteria—alike pathogenic.

Mistakes and grave errors on the part of even competent surgeons and obstetricians too often arise from a momentary forgetfulness, resulting in failure of operation and sometimes even in loss of life itself, and all through faulty technique.

It has occurred to me, as being both profitable and entertaining, to contrast the aseptic methods of handling lying-in cases in the hospitals of our city with that in vogue in general practice, and incidentally to note results. To this end I have visited four hospitals and obtained reports from each, through the kindness of physicians in charge; and I have a similar number of reports from four physicians in private practice, myself one of the number.

Dr. E. A. Tucker, representing the Sloane Maternity Hospital, says all patients on entering that hospital are given a general bath, a douche, and an enema and kept scrupulously clean thereafter. Preparatory to attending a woman in labor, the accoucheur scrubs his hands and arms well with tincture of green soap and hot water, special attention being paid the nails. And finally, after drying with a clean towel, they are soaked in a one per-cent. solution of lysol. Lysol is now being tried instead of bichloride of mercury, which was formerly used. The abdomen, external genitals, and thighs of the woman are asepticized in the same manner as the hands of the accoucheur. An enema of soapsuds is given and a vaginal douche of bichloride-of-mercury solution, 1 to 5,000, is administered. A hot vaginal douche of bichloride-of-mercury solution, 1 to 5,000, is given immediately after the expulsion of the placenta, but no further douches are used during the puerperium unless they are specially indicated. When labor begins the whole procedure is quaintly expressed in the word BEDS. B, bath; E, enema; D, douche; and S, scrubbing. Of four thousand seven hundred women confined to date, only three have died from sepsis, and they were infected before entering the hospital.

Dr. Matthias Nicoll, Jr., resident physician of the New York Foundling Hospital, reports in nineteen hundred and twelve confinement cases from January, 1885, to September, 1895, including a fair proportion of emergency cases, only two deaths from sepsis, the physician in charge having also had the care of children in other departments, including, up to three years ago, entire charge of the infectious diseases and more or less pathological work.

Patients are confined partly in private, partly in the delivery room; the latter cases afterward are transferred to one of two maternity wards, both not being used at the same time. Wards are changed every month, the one in disuse being thoroughly cleaned and aired. At the beginning of labor the patient is given an enema, and a vaginal douche of bichloride (1 to 5,000). The patient is allowed to walk and sit around till the beginning of the second stage of labor. The limbs from the hips down, including the feet, are incased in clean linen drawers made in two parts. The thighs are enveloped in bichloride towels. Another towel is placed under the buttocks and one in front of them, and another covers the lower edge of the nightdress. The hands of the physicians and nurses are cleansed with hot water, soap, and a nailbrush, then rinsed in bichloride solution (1 to 2,000). The physician's clothes are completely covered by a clean linen gown, the sleeves of which are fastened above the elbows. After the birth of the child and the delivery of the placenta, if any doubt exists as to the emptiness of the uterus, the hands are scrubbed again and disinfected, and one of them is carried into the uterus, to completely remove any retained membrane. An intra-uterine douche follows of bichloride (1 to 5,000), at a temperature of 116° to 118° F. Not invading the uterus, only a vaginal douche is given. The external genitals are thoroughly cleansed with weak bichloride solution, covered with a pad wrung out of bichloride solution (1 to 5,000), held in place by a clean napkin, itself retained in its place by an abdominal binder. Ordinarily, dressings are changed only four times in twenty-four hours, depending, however, on amount of lochia, use of bedpan, etc. After each removal of dressing, the parts are washed with a two-per-cent. solution of creolin. After four days napkins alone are used. Salts for the bowels are given on the second morning after delivery. There being no complication, the patient is allowed up on the tenth day.

Dr. William Steinach, house surgeon, New York Maternity Hospital, Blackwell's Island, says: From 1886 to 1891 had sixteen hundred and ninety-four confinement cases with four deaths from sepsis; from 1891 to 1895, thirteen hundred and twenty-one cases and no deaths.

Between 1891 and 1895 there were thirty-five versions, eleven high forceps operations, five symphysiotomies, one Cæsarean section, with many low forceps operations, post-partum hæmorrhages, induction of premature labor, etc., all of which increase the danger of septic infection.

The hospital consists of two buildings: waiting pavilion and hospital proper—the latter having three wings, each constituting a ward of ten beds, and are used in rotation. Delivery takes place in an octagonal room at the convergence of the wings.

The wards are fumigated with sulphur, floor and walls are washed off with bichloride (1 to 1,000), beds carbolized with 1 to 20, and bedding renewed with clean blankets, spreads, etc.

As soon as a patient is in labor, she receives a vaginal douche of bichloride (1 to 1,000), and an ordinary enema. In the latter part of the first stage she is brought to the delivery room, the pubic hair cut short with scissors, vestibule sponged off, and catheterized with aseptic catheter. The vulva, abdomen, and thighs are scrubbed with green soap and water, rinsed off with sterilized water, followed by a rinsing with bichloride (1 to 2,000).

The hands of the accoucheur are thoroughly scrubbed with brush, green soap, and water; the nails are cleaned with nail cleaners, which are always in a carbolic solution of 1 to 40. The hands are rinsed in sterilized water and soaked in bichloride (1 to 2,000), scrubbing with a brush for several minutes, and finally immersed in a two-per-cent. solution of creolin, which is also used occasionally as a lubricant, when one is used at all. During the progress of the second stage of labor, cotton sponges dipped in bichloride (1 to 2,000) are used to remove blood or discharges, after which the vulva is covered with sterilized gauze. The thighs, the abdomen, and the bed under the buttocks are covered with towels wrung out of bichloride (1 to 1,000). A vaginal douche of bichloride (1 to 10,000) at a temperature of 110° to 114° is given after the expulsion of the placenta. An intra-uterine douche follows any entrance of instruments or hands within the uterine cavity.

Unless special indications arise, no vaginal douches are given during the puerperium. Perineal and cervical lacerations are immediately sewn up. During the lying-in period the patient is dressed once in six hours, and always after a movement of the bowels. The vulva is irrigated with 1-to-10,000 bichloride (not the vagina) and covered with a pad of sterilized gauze, ten to twelve thicknesses, and over this is placed an occlusion pad of cotton enveloped in unbleached muslin pinned to the binder. Breast and abdominal binders are used. The bowels are moved on the second or third day by some mild laxative. Dressings, as described, are kept up for ten days, when the patient is transferred to the convalescent ward in the general hospital. All instruments—such as forceps, etc.—are boiled half an hour in a one-per-cent. solution of soda. There is rarely any rise of temperature. If, however, there should be any, the uterus is washed out with a two-per-cent. creolin solution. If the temperature is not reduced, the patient is placed in a special septic pavilion, with a separate staff of physicians and special nurses not in any way connected with the regular maternity hospital.

Dr. H. McM. Painter, of the Society of the Lying-in Hospital, Second Avenue and Seventeenth Street, says: "It must be remembered that this hospital differs from other lying-in hospitals in that its work is done in the poorest class of tenement houses, yet with an effort to render a service equal to that done in lying-in hospitals generally. Its chief object is to instruct graduates and students, who come in personal contact with the parturients.

"Instruments and other paraphernalia used in the lying-in chamber are most carefully asepticized. On arriving at the case the pupil must wash his hands with soap and water, and then wash the vulva, mons Veneris, groins, nates, and external perinæum of the woman, rinsing off these parts with bichloride (1 to 1,000). Unless purulent discharge or some suppurative process exists, the internal genitals are not disinfected.

"The pupil now disinfects his hands, wrists, and forearms by scrubbing with soap, water, and nailbrush, at least three minutes. This act is repeated in a bichloride solution (1 to 1,000). We urge as a most important point that the finger enter the vagina still wet from the cleansing process just described, touching absolutely nothing between the washing solution and the vagina. This process of disinfection is repeated before each vaginal examination.

"The external parts are disinfected every three hours so long as labor continues. After the removal of the placenta, a hot vaginal douche of 1-to-10,000 bichloride is given. There is no meddling with the internal genital tract during the puerperium. The parts are simply kept clean and the vulvar pads changed twice daily. An intra-uterine douche follows intra-uterine manipulations, however insignificant.

"From January, 1890, to April, 1893, thirty-seven hundred and thirty-seven puerperal cases; eight deaths from sepsis."

Dr. Painter kindly endeavored to add more cases, bringing it to date, but was unable to do so. The statistics of that hospital are now in process of preparation.

Dr. T. J. Kearney says: "I am a firm believer in rigid antisepsis—rigid in the hospital sense, if you please—and in sixty per cent. of my cases I carry it out with premeditation, acting in the same way with such cases as I do in the performance of surgical operations. I look upon all febrile cases following labor as septic, unless the condition is due to some intercurrent disease, as rheumatism, malarial fever, etc. I believe so-called milk fever to be septic in character. In seventy-nine cases since 1890 I had one death from sepsis."

Dr. J. K. Crook says: "As antiseptic precautions, I have instructed patients in most cases to have everything pertaining to person, bed, etc., as neat as circumstances would allow. I wash my hands thoroughly in hot carbolized water. I use white Castile soap when obtainable. I must confess I have sometimes been placed in a position where neither carbolic acid nor Castile soap was procurable. Ordinary toilet or washing soap was then used. Several years ago I used bichloride of mercury, but have latterly used carbolic acid. I never prescribe vaginal douches except when the discharges become offensive. Under those circumstances I use carbolized hot water, one drachm to the quart, two or three times daily. I have not been in the habit of suspending obstetrical practice on account of scarlet fever, erysipelas, or other contagious diseases, but take the precaution to use a double wash for hands, brush nails, etc. In a recorded list of two hundred and sixty five consecutive cases there were no deaths attributable to or consequent upon parturition. None developed puerperal septicæmia."

For myself, I beg to report four hundred and fifty-eight confinement cases since January, 1888, with only one death from sepsis.

In hospital practice, where time and means are ample, with a competent staff of physicians and nurses always present, I commend extreme means of asepsis. And, too, on account of the surroundings rendering the patient more liable to sepsis, a stricter antiseptic course is all the more imperative.

In private practice I contend that such a course is neither practicable nor necessary. I profess to be in harmony with the title of my paper when I advocate the simple yet effectual course suggested by the requirements of the occasion. In private practice the physician is usually called when labor is well advanced, and on arrival at the bedside of the patient often finds that he has only time to wash his hands in some antiseptic solution before the second stage is completed. The disadvantages in private practice concerning aseptic work are well known and generally conceded. On this account too great laxity, no doubt, sometimes prevails. While I do not object to hospital asepsis being attempted in private practice, I do not recommend it. Yet I insist on absolute cleanliness at the bedside of the lying-in patient in so far as that is possible. Briefly, the physician should recommend, when feasible, a clean and neat nurse who understands the importance of the occasion. Too much stress can not be laid upon the keeping of bedding and clothes of patients perfectly clean.

Preparatory to an examination of the patient the accoucheur must wash his hands in either carbolic acid or bichloride solution. After the birth of the child and placenta repair any excessive rents in the vagina or perinæum. Irrigate the vagina with carbolized solution, repeated twice daily for two or three days, for the purpose of dislodging clots, soothing bruised and sore parts, and as a means of asepsis. Put on an abdominal binder with a moderate compress. See that the bladder is emptied twice daily.

Give castor oil or citrate of magnesium on the second or third day. Hands or instruments entering the uterus, that organ should be washed out with a bichloride solution (1 to 10,000). Give the most nutritious liquid food for the first few days. Accustom the child to the breast early. If there are no complications, allow the patient up on the ninth or tenth day. This is my routine practice with many exceptions.

Recapitulation.—Hospitals, 13,362 cases; 17 deaths; approximately one eighth of one per cent. Private practice, 952 cases; 2 deaths; approximately one fifth of one per cent. Hospital death ratio, one to every 786 cases. Private practice death ratio, one to every 476 cases.

104 LEXINGTON AVENUE.

A UNIQUE CASE OF APPENDICITIS.

By WILLIAM W. TAYLOR, A. B., M. D.,
MEMPHIS, TENN.

THE following case of appendicitis is to me unique in some respects, and well illustrates a danger in delaying operative interference:

M. S., a girl, eleven years of age, was taken suddenly sick on Tuesday night, July 23, 1895, with pain in the abdomen. On Wednesday her temperature reached 102° F. After purgation she was free from general pain over the abdomen, but there remained tenderness on pressure over the appendix. During Thursday and Friday the tenderness over the appendix continued with intermittent attacks of acute pain several times in twenty-four hours.

I saw her for the first time on Saturday, the fourth day of illness. At that time there was marked tenderness over McBurney's point, no rigidity of muscles on the right side, no swelling of the abdomen, pulse 100, temperature 99·5°, and at times some nausea.

Immediate operation was advised but positively declined. On Sunday the condition of the abdomen was about the same, with pulse 114 and temperature 99°. All the time there was intense thirst and respiration accelerated. On Monday there was some nausea with vomiting one time, pulse 128, temperature 99·5°, no tumor, no rigidity of muscles, no swelling of abdomen, but increased pain over the appendix. Operation was then accepted and done as soon as possible on Monday afternoon, the end of the sixth day of sickness. The appendix was found free and in external appearance seemed normal. It was, however, removed, and the abdomen closed without irrigation or drainage. There were no adhesions and no evidences of peritonitis.

The operation was short, but when the patient was placed back in bed the pulse was found to be very quick and feeble—so much so that it could not be counted. Hot applications and large doses of strychnine were resorted to, and in several hours the strength of the pulse was improved, but it was never less than 140. At the end of twenty-four hours the bowels were moved with calomel and salts; nourishment and stimulants were begun, all of which were retained. There was no vomiting at all after the operation, and no swelling of the abdomen. The patient died at the end of thirty-six hours, the fatal exit being apparently due to general sepsis.

The following is a report made on examination of the appendix by Dr. William Krauss, a very competent microscopist of this city:

"On inspection, the entire mucosa presents the appearance of multiple erosion. A small focus the size of a bean appeared to be necrotic, and was found so on microscopic examination. There was no perforation. Vertical section shows follicular ulceration in all degrees, the surface epithelium remaining only in a few places, while at others the ulcers extend through to the submucosa and even invading the muscularis. On the free surface, both of the remaining epithelia and of the crypts, rod-shaped bacteria are found in limited numbers. The lymphoid tissue which almost wholly replaces the inner coat is invaded by cocci, mostly within the lymphocytes. There were no aggregations of cocci, so that it could not be ascertained whether they were staphylococci or streptococci. No culture test was possible, the specimen being in alcohol. The lymphocytes containing cocci may be taken to represent others that had gone before and were carried into the circulation, thus producing a septic condition. This is in accord with symptoms as related to me. With the evidence before us we must conclude that this was a case of mycotic appendicitis, not extending deeply enough to produce peritoneal symptoms.

"I have omitted to mention that the appendix did not exhibit any gross pathological lesion externally, looking healthy to all appearances."

On the fourth day of the illness, when the case was first seen by me, operation was advised, because I have been led to believe that with a diagnosis of appendicitis, with a rapid pulse and respiration, with a temperature nearly normal, and, in short, when at this time the patient was still sick, there was necessity for operative measures. However, as there was no muscular rigidity or any symptom of peritonitis, and the child was bright and cheerful, consent for operation could not be obtained at this time.

The case is especially interesting from the fact that with as much destructive process within the appendix as described in the microscopical report there was no induration or augmentation in volume. In the literature at hand no such condition of the appendix has been described. When the appendix was opened there could be seen with the naked eye almost total destruction of the mucous membrane, and in several places excavations extending down to the serosa. No doubt if the case had gone along a short time longer perforation would have occurred and then we would have had the usual symptoms in such conditions. The inner surface of the appendix presented the appearance of follicular ulceration of the intestine as so clearly described by L. Emmett Holt in his classical paper on Diarrhœal Diseases, in Keating's *Cyclopædia of the Diseases of Children.* Neither at the time of operation nor at any other time *intra vitam* were there any evidences of a coexisting enteritis.

It is extremely unfortunate that a bacteriological examination was not made. Infection must have taken place through the submucosa or through the lymphatic channels leading directly from the mucous membrane. The poison was, no doubt, a micro-organism from within the intestine, and to produce such intense intoxication it must have been one or more of very great virulency.

This case, which seemed mild as regards abdominal symptoms, shows clearly that the mode of termination in any case of appendicitis is mere guesswork, and that when the patient is not practically well at the end of twenty-four hours the safer course lies in the early operation.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, NOVEMBER 2, 1895.

THE DIPHTHERIA OF FOWLS AND ITS RELATION TO PUBLIC HEALTH.

A BROCHURE entitled *Investigations concerning Infectious Diseases among Poultry* has recently been issued by the Bureau of Animal Industry. It is made up of four valuable articles headed An Infectious Disease among Turkeys caused by *Protozoa* (Infectious Entero-hepatitis), A Preliminary Investigation of Diphtheria in Fowls, A Study of a Bacillus obtained from Three Outbreaks of Fowl Cholera, and On a Pathogenic Bacillus of the Hog-cholera Group associated with a Fatal Disease in Pigeons. The first of these articles is by Dr. Theobald Smith; the others are by Dr. Veranus A. Moore.

Dr. Moore concludes from his investigations and from the published statements of a large number of poultry raisers that the diphtheria of fowls can be prevented, and if introduced into a flock can be cured. Although, he says, it will be necessary to determine experimentally the efficiency of curative agents on a considerable number of fowls before formulas for treatment can be laid down, several important suggestions present themselves, especially in reference to preventive measures. In order to prevent this disease, says Dr. Moore, many conditions must be strictly complied with. The character of the food and the general sanitary conditions, including cleanliness, ventilation, and the temperature of the poultry houses, must be considered, he says, and he thinks there is much to be learned in connection with the proper care of poultry, especially in rural districts, where it is probable that many methods now in use will, after a careful investigation, be found defective. The determination of these details, he adds, must necessarily be made by those actually engaged in the raising of poultry. In addition to general sanitary methods, he thinks the following rules should be observed: 1. Fowls which have an exudate on any of the mucous membranes of the head, or which have come from flocks in which such a disease exists or has recently existed, should not be introduced among other poultry. 2. If the disease appears in one or more fowls of a flock they should be separated from the well ones immediately. If possible, the source of the infection should be determined and removed. 3. The quite common practice of allowing fowls from different flocks to run together during the day should be discouraged. 4. Care should be taken to avoid the possibility of bringing the virus of the disease from affected flocks in the dirt or excrement which naturally adheres to the shoes in walking through an infected chicken yard. The same care is necessary in the interchange of working implements, such as shovels, hoes, etc.

Dr. Moore remarks that the diphtheria of fowls is one of the few diseases of poultry for which curative measures promise to be of practical value. The practice of destroying all the affected birds should be discouraged. Although, says Dr. Moore, experiments have not been made to test the efficiency of remedies already recommended or to investigate the practicability of others, the testimony of many practical poultry raisers is to the effect that the disease is amenable to treatment. The most efficient of the known methods of treatment, he thinks, is the local application of certain disinfectants, among which a weak solution of carbolic acid appears to him the most satisfactory. The fact that the lesions are so exposed renders the disease especially favorable for topical applications. The administration of mild stimulants also has been recommended. In addition to the medicinal treatment, it is of much importance that the affected fowls be provided with proper food and kept in dry, warm, and well-ventilated apartments. In the course of his study a considerable number of badly affected fowls fully recovered in the animal room of the laboratory with no treatment other than being kept in a warm, dry atmosphere. It is frequently necessary to remove the exudate before the application of the disinfectant. A few fowls that evidently would have soon died from starvation or a closure of the respiratory passages were immediately relieved and cured by removing the obstructing exudate. Certain disinfectants and stimulants, Dr. Moore is advised, will give good results, if administered early in the course of the disease by mixing them with the food and thus eliminating the necessity of individual application.

A comparison of the Klebs-Loeffler bacillus as found in man with the one described by Loeffler as the cause of diphtheria in fowls shows, says Dr. Moore, that morphologically and in their pathogenesis for experimental animals the two organisms are in no way alike. There is also, he adds, a marked difference in the nature of the exudates in fowls and in man, and the diversity of the two diseases has been clearly pointed out by Ménard. But, although these diseases are shown by several observations to be unlike in their ætiology and the character of their lesions, the transmission of fowl diphtheria to the human species, and *vice versa*, is affirmed by several writers. Dr. Moore cites instances reported by Gerhardt, Debrie, Cole, Loir and Ducloux, Ménard, and Schrevens.

Although, says Dr. Moore, the number of reported cases of the transmission of fowl diphtheria to the human species, and *vice versa*, is small in comparison with the extent of the disease in poultry, the evidence that such a transmission is possible is quite sufficient to discourage the careless handling of diseased fowls. It is a quite common practice, especially in the rural districts, to bring the sick chickens into the house for treatment, where the children of the household are allowed to fondle them at will. It is not improbable, Dr. Moore thinks, that when this disease is thoroughly investigated the number of cases of direct infection from this source will be found to be much larger than is at present supposed. Until such investigations are satisfactorily completed, he adds, the indiscriminate handling of diphtheritic chickens, especially by children, and the exposure of fowls to the infection of diphtheria in the human species, whereby they may become carriers of the virus, should be strenuously avoided.

Dr. Moore summarizes his conclusions as follows: 1. Many of the so-called diseases of fowls which are characterized by an affection of the mucous membranes of the head, and popularly designated as "roup," diphtheria, influenza, and sometimes cholera, resemble each other so closely in their manifestations that they may be considered as belonging to one and the same disease. This disease is distinct from the rapidly fatal malady which is better known as fowl cholera. 2. The lesions, as usually encountered, are diphtheritic in nature. In the advanced stages the accumulating exudates decompose and emit a putrid odor. In the earlier stages they are frequently of a serous or muco-purulent character, and not infrequently fowls die before the diphtheritic condition appears. 3. The same species of a pathogenic bacillus is associated with apparently different forms of lesions, more particularly in the serous or muco-purulent and diphtheritic. This bacillus is not distinguishable from the one described by European writers as the cause of fowl cholera, and can not be distinguished in parallel cultures from the bacillus of swine plague. It is comparable in certain respects to the supposed specific organisms of certain diphtheritic diseases of poultry and birds. Its causal relation to this disease, however, is not demonstrated. 4. This disease usually runs a slow, chronic course from which the majority of the affected fowls recover. Its long duration enables the lesions to be more or less modified from the effect of external contamination. Outbreaks in which the disease runs a rapidly fatal course are reported, but thus far they have not been encountered in the investigations of the bureau. 5. This disease, or, as may subsequently be found, these diseases, is, or are, amenable to treatment. The treatment consists largely in good hygiene, and the removal of the accumulated exudate when the disease has reached the advanced stage. The local application of disinfectants is indicated. 6. A large number of slight or severer enzootics among fowls, due to local unsanitary conditions, are popularly considered as outbreaks of some contagious disease. 7. Judging from the results of these investigations and the recorded experience of certain poultry raisers, it is highly probable that this malady would have been prevented in a large proportion of the flocks in which it now exists if careful sanitary methods had been followed and precautions taken against the introduction of the disease through the purchase of affected fowls.

We have given Dr. Moore's observations and deductions almost in his own words. Their importance can hardly be overrated.

ITEMS, ETC.

Cork Pavement.—The *Boston Medical and Surgical Journal* for October 24th publishes a letter in which the writer considers the advantages of cork for paving purposes. In view of the importance now being attached to sanitary street pavement, he says, and the number of articles published in the medical journals favoring this branch of internal improvement, it is remarkable that no allusion has thus far been made to the so-called cork pavement. This designation, he remarks, is perhaps a misnomer, for the material consists of granulated cork, mixed with mineral asphalt and other cohesive ingredients compressed into large blocks. Strictly speaking, then, these bricks are formed of a mixture of which cork is, however, the most characteristic and important element. The advantages alleged in behalf of this combination are cleanliness, noiselessness, durability, elasticity, freedom from slipperiness whether wet or dry, and moderate cost. Unlike wood, it is non-absorbent and hence inodorous; it presents the minimum resistance to traction; it is elastic under passing loads, and thus does away with the vibration caused by heavy teaming, one of the most disagreeable features of our narrow, congested streets. The blocks are imbedded in tar and rest upon a concrete base six inches thick. The writer adds that cork pavement is not altogether a novelty. It has been tested for four or five years in Melbourne, Sydney, and other Australian towns, and also in London and Edinburgh, and in all these localities the invention has been pronounced meritorious. As regards cost, the writer goes on to say, cork is not very expensive, because its use has up to the present time been so very limited, that of being employed chiefly as stoppers to bottles, soles to boots, and life-preservers, and as a floor-covering in the form of linoleum. The supply of this commodity, on the other hand, can be indefinitely increased, for the species of oak (*Quercus suber*) from which cork is obtained can be stripped of its outer bark every eight years, and is said to actually thrive under this operation for a hundred and fifty years and upward. Hence it is not to be apprehended that a more extensive demand would greatly enhance its price. Considering then, he says, the rare combination of qualities which cork seems to offer in the line of pavement, and the unequivocal proofs offered of its success elsewhere, it would certainly seem worth while to give it a trial on a section of some one of our streets.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 29, 1895:

DISEASES.	Week ending Oct. 22.		Week ending Oct. 29.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	62	9	50	9
Scarlet fever	36	3	47	2
Cerebro-spinal meningitis	1	1	4	4
Measles	52	5	52	9
Diphtheria	162	20	180	23
Small-pox	1	0	0	1
Tuberculosis	115	116	114	118
Leprosy	0	0	1	0

The Southern Surgical and Gynæcological Association will hold its eighth annual meeting at the Hotel Shoreham, in Washington, on Tuesday, Wednesday, and Thursday, November 12th, 13th, and 14th, under the presidency of Dr. Louis McLane Tiffany, of Baltimore. Papers are announced as follows in addition to the president's annual address: A Case of Gunshot Wound of the Brain; Removal of the Bullet; Recovery, by Dr. W. E. Parker, of New Orleans; Personal Experience in the Treatment of Stab Wounds of the Intestines and Peritonæum, by Dr. Bedford Brown, of Alexandria, Va.; Report of Five Cases in Abdominal Surgery in which the Murphy Button was Applied, by Dr. A. Vander Veer, of Albany; Resection and Intestinal Anastomosis, by Dr. H. Horace Grant, of Louisville; Cæcal Hernia, with Report of Cases, by Dr. W. O. Roberts, of Louisville; Necrosis of the Ribs in Three Cases in Typhoid Fever, by Dr. W. L. Robinson, of Danville, Va.; Surgical Interference in Rectal Disorders, by Dr. J. McFadden Gaston, of Atlanta; Cancer of the Pregnant Uterus, by Dr. G. H. Noble, of Atlanta; Hysterectomy for Fibroids, by Dr. E. S. Lewis, of New Orleans; Abdominal Hysterectomy, by Dr. Joseph Price, of Philadelphia; The Technique of Supravaginal Hysterectomy, by Dr. Howard A. Kelly, of Baltimore; Some of the Reasons for Preferring Vaginal to Abdominal Section for Pus in the Pelvis, by Dr. Joseph Taber Johnson, of Washington; Indications and Technique of Vaginal Hysterectomy, by Dr. G. H. Rohé, of Catonsville, Md.; Hysterectomy for Puerperal Sepsis, by Dr. A. M. Cartledge, of Louisville; The Management of Cases of Recovery from Appendiceal Abscess in which the Appendix was not Removed, by Dr. J. D. S. Davis, of Birmingham, Ala.; Mental Complications as a Result of Surgical Operations, by Dr. J. T. Wilson, of Sherman, Tex.; The Comparative Frequency of Stone in the White and Negro Races, by Dr. George B. Johnston, of Richmond; Report of Cases of Cystotomy for Stone, by Dr. W. F. Westmoreland, of Atlanta; Parapharyngeal Tumors; Remarks on their Anatomy, Location, and Operative Treatment from Three Observed Cases, by Dr. Christian Fenger, of Chicago; Uninterrupted Anæsthesia in Face and Mouth Operations, by Dr. Edmond Souchon, of New Orleans; Dr. J. Marion Sims and his Work —a Sketch, by Dr. John A. Wyeth, of New York; The Management of Intestinal Complications in Intrapelvic Operations, by Dr. L. S. McMurtry, of Louisville; Vaginal Incision and Drainage in Pelvic Inflammation, by Dr. J. W. Long, of Richmond; Abdominal Pregnancy, by Dr. Cornelius Kollock, of Cheraw, S. C.; Report of a Case of Extra-uterine Pregnancy, by Dr. John T. Henry, of Chester, S. C.; Endometritis, by Dr. James T. Jelks, of Hot Springs, Ark.; Fractures at the Elbow Joint, by Dr. J. B. Murfree, of Murfreesboro, Tenn.; The Telephonic Bullet Probe, by Dr. A. H. Buckmaster, of University of Virginia; Surgical Hyperpyrexia, by Dr. G. A. Baxter, of Chattanooga; Cholecystenterostomy, by Dr. W. B. Rogers, of Memphis; The Surgery of the Biliary Ducts, by Dr. W. E. B. Davis, of Birmingham, Ala.; The Technique of the Buried Suture, by Dr. Henry O. Marcy, of Boston; The Use of Subcutaneous Saline Infusion in Shock and Hæmorrhage, by Dr. G. H. Rohé, of Catonsville, Md.; Report of Cases of Tracheotomy for Foreign Bodies in the Trachea, by Dr. W. F. Westmoreland, of Atlanta; Abscess of the Lung, by Dr. J. A. Goggans, of Alexander City, Ala.; and a Report of a Case of Ligation of the Common Iliac Artery; Recovery, by Dr. W. E. B. Davis, of Birmingham, Ala.

The Samuel D. Gross Prize.—The Philadelphia Academy of Surgery gives notice that the second quinquennial prize of a thousand dollars, under the will of the late Samuel D. Gross, M. D., will be awarded on January 1, 1900. The conditions annexed by the testator are that the prize shall be awarded every five years to the writer of the best original essay, not exceeding a hundred and fifty printed pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens.

It is expressly stipulated that the successful competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery. The essays, which must be written by a single author in the English language, should be sent to Dr. J. Ewing Mears, 1429 Walnut Street, Philadelphia, before January 1, 1900. Each essay must be distinguished by a motto and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays if reclaimed by their respective writers or their agents within a year. The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

The New York Obstetrical Society.—Officers for the year 1895–'96 have been elected as follows: President, Dr. Henry C. Coe; vice-presidents, Dr. J. Riddle Goffe and Dr. A. Palmer Dudley; recording secretary, Dr. Arthur M. Jacobus; assistant recording secretary, Dr. George W. Jarman; corresponding secretary, Dr. Robert L. Dickinson; treasurer, Dr. J. Lee Morrill; pathologist, Dr. George C. Freeborn.

The Late Dr. H. B. Conrad.—At a special meeting of the Lenox Medical and Surgical Society held on October 21, 1895, the following preamble and resolutions were adopted:

Whereas, In the death of Dr. H. B. Conrad the society has lost one of its earliest and most zealous supporters and its members a genial and generous friend,

Resolved, That we deplore his sudden and untimely end, and offer to his bereaved family our most heartfelt sympathy; and

Resolved, That these resolutions be entered upon the minutes of the society, published in the *Medical Record* and *New York Medical Journal*, and a copy sent to the family of our late member.

[Signed.]
J. Blake White,
Frederick S. Sellew,
H. H. Seabrook,
Committee.

The Index Medicus.—The following subscriptions for the *Index Medicus* have been received by Dr. Billings for the period September 24 to October 24, 1895:

Battle Creek, Mich.—American Medical Missionary College.

Boston.—Dr. E. G. Cutter, Boston Medical Library Association, Boston Society for Medical Improvement, State Board of Health, Massachusetts.

Bristol, England.—Bristol Medical Library.

Brooklyn.—Dr. George R. Fowler, Pratt Institute.

Buffalo.—Dr. M. D. Mann, Dr. John Parmenter, Dr. Roswell Park, Medical Department, University of Buffalo.

Chicago.—Dr. J. H. Etheridge, Dr. E. Fletcher Ingals.

Cincinnati.—Dr. Joseph Ransohoff.

Cleveland.—Dr. Hunter Robb.

Denver.—Dr. J. T. Eskridge.

Grand Rapids, Mich.—Medical Library Association.

Nashville.—Dr. Richard Douglas.

New Haven.—State Board of Health, Connecticut.

New York City.—Dr. I. Adler, Dr. Samuel Alexander, Dr. L. B. Bangs, Dr. Francis Delafield, Dr. C. A. Herter, Dr. A. Jacobi (two copies), Dr. Mary Putnam Jacobi, Dr. E. L. Keyes, Dr. F. P. Kinnicutt, Dr. Charles McBurney, Dr. John P. Munn, Dr. W. K. Otis, Dr. W. M. Polk, Dr. B. Sachs, Dr. Reginald H. Sayre, Dr. John E. Weeks, German Hospital and Dispensary, New York State Medical Association, Woman's Medical College of New York Infirmary.

Philadelphia.—Dr. Thomas G. Ashton, Dr. F. X. Dercum, Dr. H. A. Hare, Dr. Ernest Laplace, Messrs. Lea Brothers & Co., Dr. J. H. Musser, Dr. S. D. Risley, Mr. W. B. Saunders, Alumni Association of Woman's Medical College, College of Physicians of Philadelphia, Philadelphia County Medical Society, Philadelphia Pathological Society.

Pittsburgh.—Allegheny County Medical Society.

Providence.—Dr. M. B. Gornberg.

Richmond.—Dr. G. B. Johnston.

St. Louis.—Dr. E. C. Burnett, Dr. Henry H. Mudd.

San Diego.—Dr. W. A. Edwards.

Troy.—Dr. W. Wotkyns Seymour.

Washington, D. C.—Medical Society of the District of Columbia.

Dr. Martin Deschere, of New York, in a letter to this journal, says: "Kindly add my name as a subscriber to the *Index Medicus*, the sudden termination of which I deeply regretted."

Dr. George Thomas Jackson reports the following additional subscriptions:

Dr. J. W. Brannan, New York.
Dr. G. R. Fowler, Brooklyn.
Pratt Institute, Brooklyn.
Hoagland Physiological Laboratory, Brooklyn (obtained by Dr. Winfield).

The New York Polyclinic.—Dr. H. N. Heineman has resigned his professorship of general medicine, with the intention of spending about a year in a special study of cardiac diseases in Europe.

The City Hospital.—Dr. James P. Tuttle has been appointed on the medical staff.

Change of Address.—Dr. Samuel E. Milliken, to No. 640 Madison Avenue, New York.

Society Meetings for the Coming Week:

Monday, *November 4th:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; Morrisania Medical Society, New York (private); New York Medico-surgical Society; Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society; South Pittsburgh, Pa., Medical Society.

Tuesday, *November 5th:* New York Obstetrical Society (private); New York Neurological Society; Buffalo, N. Y., Medical and Surgical Association; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Hampden, Mass., District Medical Society (Springfield); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *November 6th:* New York Academy of Medicine (Section in Public Health); Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton); Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *November 7th:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Medical Society of the County of Orleans, N. Y. (annual — Albion); Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Cuyahoga County, O., Medical Society.

Friday, *November 8th:* Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.; Cleveland Medical Society.

Saturday, *November 9th:* Obstetrical Society of Boston (private).

Births, Marriages, and Deaths.

Married.

Bering—Bostwick.—In New Orleans, on Wednesday, October 16th, Dr. Robert E. Bering, of Houston, Texas, and Miss Noemie Bostwick.

Catlett—Michie.—In Aberdeen, Miss., on Wednesday, October 23d, Dr. John B. Catlett, of Charlottesville, Va., and Miss Lizzie Michie.

Hagaman—Purnell.—In Lindsay, La., on Wednesday, October 23d, Dr. W. F. Hagaman and Miss Lydia Adele Purnell.

Mabbott—Ollive.—In New York, on Wednesday, October 30th, Dr. J. Milton Mabbott and Miss Kate Adele Ollive.

McCormick—Priestly.—In Canton, Miss., on Monday, October 21st, Mr. James McCormick and Miss Essie Fulton, daughter of Dr. C. S. Priestly.

Tanner—Barrett.—In Buffalo, on Wednesday, October 23d, Dr. Herbert N. Tanner, of Lebanon Springs, N. Y., and Miss Alma Edna Barrett.

Thomas—Jones.—In Baton Rouge, La., on Tuesday, October 22d, Dr. John N. Thomas, of the State Quarantine Service, and Miss Winifred M. Jones.

Died.

Bartow.—In Astoria, N. Y., on Saturday, October 26th, Dr. Charles Bartow.

Buchanan.—In Seattle, Wash., on Sunday, October 27th, Dr. Edwin Buchanan, in the thirty-seventh year of his age.

Fewsmith.—In Newark, N. J., on Wednesday, October 30th, Mrs. Emma C. Fewsmith, widow of the Rev. Dr. Fewsmith and mother of Dr. Joseph Fewsmith, of Newark, aged seventy-four years.

Fish.—In Amherst, Mass., on Monday, October 28th, Dr. D. B. N. Fish.

Young.—In Brooklyn, on Saturday, October 26th, Dr. Thomas F. Young, in the thirty-first year of his age.

Proceedings of Societies.

NEW YORK STATE MEDICAL ASSOCIATION.

Twelfth Annual Meeting, held in New York on Tuesday, Wednesday, and Thursday, October 15, 16, and 17, 1895.

The President, Dr. Austin Flint, in the Chair.

A Clinical Report on Orthopædic Surgery was read by Dr. S. E. Milliken, of New York County. The first case presented was one of tendon grafting, the first successful attempt, the author thought, that had been made to make a healthy muscle do the work of a paralyzed one without interfering with its own healthy action. The patient was a boy of nine years, who for about seven years had been treated unsuccessfully for the relief of his condition, resulting from infantile paralysis. Examination had made it evident that the trouble was situated in the anterior tibial group of muscles, and that the tibialis anticus was the one chiefly at fault. The flexion of the foot was carried on by the action of the extensor proprius pollicis, the extensor longus digitorum, and the peroneus tertius. On February 14, 1894, the tendons had been exposed by an incision, about an inch and a half long, beginning just below the annular ligament. The sheath of the tendons having been opened, an inch flap had been taken from the tibialis anticus and extensor proprius pollicis, and united by three interrupted sutures of fine kangaroo tendon. The outer sheath of the extensor proprius pollicis had then been sewed to the inner sheath of the tibialis anticus so as to prevent the newly united tendons from becoming adherent to the overlying structures. The skin had been sutured with catgut, and an antiseptic dressing applied. After the deformity had been corrected manually, a plaster-of-Paris dressing had been applied. The limb had first been dressed on the tenth day, and gentle passive motion had been made at each subsequent dressing to prevent the tendons from becoming adherent to the sheath. After six weeks the plaster had been removed and a light brace applied. It had been found that the foot no longer became abducted when an attempt was made to raise it. Five months had elapsed since the brace had been abandoned, yet the boy could abduct the foot to the normal degree, and he had become quite expert in roller-skating.

Another case reported was one of excision of the elbow joint in a boy. The author stated that excision should be resorted to only after milder measures had failed. The indications for excising the elbow in a child were: 1. Tubercular disease, not subsiding under careful mechanical treatment, and after partial arthrectomy had failed. 2. Ankylosis in a faulty position. 3. The persistence of tubercular sinuses due to bone disease. To be effective, the operation must be complete, and the posterior incision and the subperiosteal method should be employed wherever possible. Gentle passive motion at regular intervals was essential to the restoration of motion. Such cases should be under the surgeon's care for at least six months to secure the best result. The paper closed with an analysis of the effects of etherization in twelve cases observed in the course of a month. The ether had been administered with the Ormsby inhaler. Recovery from the anæsthetic had been rapid and in some cases almost instantaneous. In only one instance had there been any serious symptoms, and in this one they had apparently been due to the bad physical condition of the patient, the result of a tubercular diarrhœa. The total quantity of ether consumed in these twelve cases had been nineteen ounces seven and a half drachms, and the total time of etherization seven hours and thirty-four minutes.

A Domestic Test for Albuminous Urine.—Dr. John G. Truax, of New York County, read a paper on this subject. He said that the heat-and-nitric-acid test was open to certain fallacies, if the test was not applied with the greatest care to urine containing only small quantities of albumin; that the reaction of uric acid and the urates with nitric acid frequently invalidated the results of the cold-nitric-acid test; that the picric-acid test required that the reagent should be carefully compounded, and, moreover, it would precipitate alkaloids in the urine; and, lastly, that these reagents were not convenient to transport, and could not be readily obtained at the bedside. The test which he proposed involved the use of a reagent that could be obtained readily in almost any house, and the test was so simple that it could be quickly and accurately applied at the bedside. All that was necessary was to pour some alcohol (sixty to ninety-five per cent.) into a test tube, or even into a tumbler, and then to drop into the alcohol the urine to be tested. If albumin was present, white streaks would appear in the alcohol as the urine passed through it to the bottom of the vessel. The only other substance found in urine that was likely to give a similar reaction was mucus, and then the manner of coagulation was different, the mucus coagulating in a diffuse cloud, instead of in well-defined lines or streaks. The test could also be applied by floating the alcohol on the surface of the urine, in which case the cloud or ring formed at the junction of the two liquids would be sharply defined in the case of albumin, and more diffused if the coagulation was due to the presence of mucin. This alcohol test was not wanting in delicacy, for it had been found to give the reaction when only one part of albumin had been present in ten thousand parts of urine. It was therefore even more delicate than the cold-nitric-acid test, and, in the author's opinion, was fully as accurate and rather more delicate than any of the usual tests employed for detecting the presence of albumin in the urine.

The Cause of Much Sickness that is often Overlooked.—Dr. W. H. Robb, of Montgomery County, read a paper thus entitled. In brief, the paper called attention to the fact that the existence of dry rot in the timbers of cellars, when associated with darkness, dampness, and poor ventilation, was a not infrequent cause of various ailments. Of the examples cited, mention may be made of a case of remittent fever that had persisted for eighty days in spite of all treatment, and yet had promptly ceased on the removal of the patient to the upper part of the house. In this house the late Dr. Harris, then the secretary of the State Board of Health, had found dry rot in the cellar timbers, and had accordingly suggested that the child be removed farther from the cellar.

The Address in Obstetrics, entitled The Present Status of Obstetrics, by Dr. Henry McM. Painter, of New York County, was devoted to a consideration of the great inadequacy of the facilities for teaching this branch in most medical schools and to the great change that had been effected by the introduction of a graded system of instruction in the practice of this art. The author was particularly severe in his denunciation of the didactic lecture, and asserted that there must be something radically wrong with our methods of teaching medicine when during the past ten years the students of our medical colleges had deemed it necessary to expend annually thirty thousand dollars in obtaining additional instruction. This inadequacy had been particularly marked in connection with obstetrics, and even at the present time there were only two institutions that gave their students practical instruction in obstetrics according to the most advanced views. These were the Sloane Maternity and the Society of the Lying-in Hospital of the City of New York. The latter gave the students systematic instruction in obstetrics, not only in the hospital, but in the poorest tenements, where they were taught to conduct a case of labor according to the most approved methods and without the help of trained nurses and without the many facilities presented by a well-regulated hospital.

Recent Studies on Diphtheria and Pseudo-diphtheria.—Dr. William H. Park, of New York County, read a paper in which he said that with the reports of about ten thousand cases treated with the diphtheria antitoxine at our disposal we were in a position to speak somewhat definitely of the value of the treatment. According to the statistical table prepared by Dr. W. H. Welch, 5,777 cases of diphtheria treated in hospitals with the antitoxine had given a mortality of 18·7 per cent., whereas in the same hospitals previous to the use of the antitoxine the average mortality had been 43·6 per cent. In New York city, the speaker said, the average mortality for the past four years for all reported cases of diphtheria had been over thirty-four per cent., and in no year had it been below twenty-five per cent. During the last nine months the mortality had been only eighteen per cent.

In the Willard Parker Hospital, in the first part of 1894, or before the introduction of antitoxine, the mortality had been thirty-six per cent., while since the advent of this new treatment the mortality had been twenty-four per cent. The cases treated this year had been fully as severe as those of last year—indeed, the most fatal cases, the cases of laryngeal diphtheria, had been one fourth greater. No unusual results had followed the injection of the antitoxine, but ordinarily within twenty-four hours the local lesions ceased to extend and, if laryngeal symptoms were present, they quickly subsided. In ten per cent. of the cases urticaria developed between the fifth day and the twentieth day, and lasted for about forty-eight hours. In a few cases there had been also swelling and pain in the joints, and in extremely rare instances these had persisted for a long time after recovery from the diphtheria. No serious effects had been observed on the heart and nervous system. He certainly had not witnessed the evil effects that Dr. Winters had said he had observed in the Willard Parker Hospital. Experiments on immunization with the diphtheria antitoxine had given ground for much encouragement. Thus, after fifteen cases of diphtheria had developed in the Nursery and Child's Hospital, the other children received "immunizing" injections, and from that time to the present diphtheria had not developed in that hospital, with two notable exceptions—in a physician and a nurse who had not been "immunized."

The Emergency Treatment in Acute Diseases of and Injuries to the Eye.—Dr. John E. Weeks, of New York County, presented a paper on this subject. Referring to the common stye, he said that moist heat should be applied for twenty-four hours, and that as soon as pus was detected a free puncture should be made. Afterward the parts should be frequently bathed with hot water. Abscesses of the lids should be opened by an incision parallel to the margin of the eyelid and the cavity curetted. As all acute diseases of the conjunctiva accompanied by a discharge were contagious, precautions should be taken in all such cases to prevent the spread of the disease, not only to others, but to the other eye. Cases of gonorrhœal conjunctivitis and ophthalmia neonatorum should be treated by cleansing the eyes with a three-per-cent. solution of boric acid, following this with a free application of a one-per-cent. solution of nitrate of silver to the palpebral conjunctiva. The eyes should be washed out as often as was necessary to keep them free from secretion, and, if there was much swelling of the lids, cold should be applied for a short time, at intervals of two or three hours. Diphtheria of the conjunctiva was usually accompanied by nasal or pharyngeal diphtheria, and was characterized by enormous swelling and a deposit of false membrane. Cold applications and washings with boric acid were immediately demanded and, where it was possible to do so, the conjunctiva should be exposed and painted with a solution of nitrate of silver.

In cases of phlegmon of the lacrymal sac moist heat should be applied as in the treatment of hordeolum, and when fluctuation could be detected an incision should be made. The cavity should then be washed out and curetted and the wound kept open for a few days. The eye should be bandaged. After a few days the lacrymal canal might be opened. Contusions of the lids were best treated by cold applications for the first twenty-four hours, and then by hot bathing. When lime had entered the eye any solid particles should be removed and the eye washed with milk. Stings and bites usually caused a swelling somewhat like that produced by erysipelas, but more translucent, and less red and unaccompanied by constitutional disturbance. Under antiseptic lotions and cold applications the swelling usually subsided in about thirty-six hours.

Unusual Cases of Orbital and Intraocular Tumors.—Dr. Charles Stedman Bull, of New York County, read a paper on this subject. (To be published.)

Notes on the Diagnosis of Interstitial Cerebritis.—Dr. Neil J. Hepburn, of New York County, reported two cases.

The Address in Medicine, entitled The Practice of Medicine in the Light of Bacteriological Researches, was delivered by Dr. A. A. Smith, of New York County. He said that as yet we had no efficient internal antiseptics which would not injure or destroy the human organism. Formerly it was thought that the bacteria themselves were the direct cause of the manifestations of disease, but it was now known that these manifestations were due to the toxines produced by them. There were three prominent methods of producing immunity in man, viz.: 1. By producing a modified form of the disease by vaccination, as Jenner had done over a hundred years ago. 2. By the introduction of the bacterial toxines without the bacteria into the system. 3. By the introduction of a serum of an animal which was either naturally or artificially proof against the disease. In view of the brilliant results already obtained in the treatment of diphtheria by the diphtheria antitoxine, the author thought we were justified in expecting a brilliant future for serum therapy. So also we might look for a similar mode of treatment for typhoid fever, lobar pneumonia, and cerebro-spinal meningitis. The very fact that recovery from disease was spontaneous suggested that there was in the blood the power to produce an agent antagonistic to the toxines which had caused the disease. The discovery of the bacillus of Friedländer and of the diplococcus of Fraenkel had not had practically very much influence on our treatment of pneumonia. The pneumonia produced by this bacillus was believed to be lobar pneumonia, and to constitute seventy-five per cent. of all cases of this disease, and the irregular pneumonias were explained by the presence of one or more of the other bacteria. Clinical experience had shown that the prognosis was more favorable in pneumonias due to the pneumococcus alone. While pneumonia was occasionally contagious, its communication was of such very rare occurrence that prophylaxis, even if we knew how to bring it about, would be superfluous. The frequent association of otitis media, cerebro-spinal meningitis, and occasionally endocarditis and pericarditis with pneumonia was now explained by the presence of the pneumococcus or one or more of the other organisms in the exudate. The specific germ of cholera, the cholera spirillum, had been discovered by Koch, but the knowledge of this fact had not found practical application in our therapeutics, unless it might be in the tannin treatment of cholera. Nevertheless, by bacteriological examination it was now possible to determine whether a given diarrhœal disease was true cholera or not. The diagnosis, prognosis, and prevention of tuberculosis had been powerfully aided by the discovery of Koch, in 1882, of the tubercle bacillus, though it had not materially changed our methods of treatment. The discovery of the bacillus had led, however, to the knowledge that many so-called scrofulous diseases were nothing more than different manifestations of tuberculosis. The communicability of tuberculosis had been established long before by clinical observation. The discovery of the typhoid bacillus had assisted very greatly in tracing the source of epidemics. The vitality of this organism was remarkable. If inclosed in a block of ice and kept frozen, it would retain its vitality for months, but if the ice was alternately thawed and frozen, the life of the germ would be destroyed in a few days. The tetanus bacillus had been discovered and isolated in 1884; soon afterward this bacillus had been found in various kinds of soil, and inoculations of animals with such soil had resulted in tetanus. An antitoxine prepared from the blood serum of "immunized animals," the speaker said, had been used in tetanus, and, it had been alleged, with curative results, but reports on this point were conflicting. The greatest influence over internal medicine exerted by bacteriology had been in diphtheria, for not only had the discovery of the Klebs-Loeffler bacillus furnished a means of establishing and confirming the diagnosis, but it had very decidedly modified the therapeutics of diphtheria. The diphtheria antitoxine still had some opponents, but, even admitting the possibility of occasional deleterious effects from its use, its wonderful beneficial action many times outweighed the possibility of harm. The principles of serum therapy had first been published in September, 1890, and in the fall of 1891 the first attempt had been made to apply it to the human being. From all over the world came reports of the curative value of diphtheria antitoxine and of its power to confer immunity from this disease. It was Pasteur's investigations in connection with rabies that had led, in part at least, to the study of immunity by means of serum therapy. Bacteriological researches had made clear many points in the ætiology of diseases; they had offered a scientific explanation of the communicability of many diseases; they had made diagnosis more definite and prognosis more accurate; they had explained complications before but little understood; they had revolutionized surgical and obstetrical practice; they had prevented the spread of dangerous epidemics; and they had led to the specific treatment of diphtheria and possibly also to that of tetanus, with the power to confer temporary immunity.

Empyema of the Antrum.—Dr. William Carr, of New York County, read a paper in which he spoke of the danger of using metal drainage-tubes and of the superior advantages of an opening through an alveolus. Personally, he did not think the nasal operation ever justifiable. If necessary, a sound tooth should be sacrificed and an opening made through the alveolus, preferably of the second molar tooth, but it was very rare that a tooth would not be found necrotic, so that no sound tooth would have to be sacrificed. After the opening had been made the cavity should be explored with a flexible probe for sæpta and foreign bodies, and, after irrigation, closed with a plug of sterilized gauze. He did not believe that drainage was an important factor in the treatment. Drainage-tubes served as a means of infection and irritation, and by their retaining ligatures were apt to cause destruction of the adjacent teeth. Silver tubes would corrode very rapidly and might even slip into the antrum.

General Suggestions regarding the Diagnosis and Treatment of Acute Aural Inflammation.—Dr. Edward B. Dench, of New York County, in a paper thus entitled, said that when the diagnosis was obscure in a child, and there was a persistent high temperature, the physician should not neglect to examine the ear. It should be remembered that in an adult tenderness of the auricle or just in front of the meatus meant inflammation of the external canal, whereas in a child it was indicative of inflammation of the middle ear. In the early stage the inflammatory process should be combated by the local abstraction of blood from the region of the tragus, and this should be supplemented by the use of dry heat. Moist heat tended to tissue necrosis, which was to be avoided. The dry heat was conveniently applied by small hot salt bags made from glove fingers, or it might be obtained by means of the Japanese pocket stove. If the symptoms continued to be urgent, a free incision, with aseptic precautions, should be made, and was a safer procedure, even in the hands of the general practitioner, than doing nothing and allowing the disease to progress. It should not be forgotten that dental caries not infrequently caused pain referred to the ear in children.

(To be continued.)

OREGON STATE MEDICAL SOCIETY.

Twenty-second Annual Meeting, held in Portland on Tuesday and Wednesday, June 11 and 12, 1895.

The President, Dr. J. A. Fulton, of Astoria, in the Chair.

(Concluded from page 313.)

Diseases of Children.—Dr. Mae H. Cardwell, of Portland, read an address on this subject. She entered a plea for the more general study of pædiatrics. Few medical schools until very recently had had chairs of diseases of children, but post-graduate study was thorough in New York, and in Germany specialists were common. The formation of the American Pædiatric Society, and the late additions of children's sections to the American Medical Association and the Section of Pædiatrics at the New York Academy of Medicine, were giving an impetus toward developing a better knowledge that would soon be felt. These were the important advances that had been made, yet there were men who realized the necessity of continued labor, and one of the last acts of Keating's life had been the publication of the *Cyclopædia of Children's Diseases.*

Oliver Wendell Holmes had said that the training of a child should begin a hundred years before it was born. And so it was true, too, that its health as well as its habits depended upon the treatment it had received during the century preceding its birth. These things must be studied from the child and not from the adult alone. Anatomy, physiology, and chemistry formed the basis of all knowledge of man, and the anatomy, physiology, and chemistry of childhood were quite at variance with that of the adult. The writer felt most deeply that if there was a place in medicine for the woman physician it was in the department of pædiatrics, and she had felt it her special prerogative. She hoped that in the future treatment would be so directed that the child would not be left to the grandmother for diagnosis and treatment of its ills.

The President's Address, entitled *Courage sans peur*, was read by Dr. J. A. Fulton, of Astoria.

Since the birth of man, since the days of chivalry, he said, the one thing above all others which had been most admired in man by all mankind was that quality of mind which gave to its possessor all the attributes, characteristics, and virtues that went to make up what we were pleased to call a courageous man. The poet had said "All the world loves the lover"; he might well have added that all the world admired, loved, and respected the man of courage.

In speaking of courage, Dr. Fulton did not mean reckless bravery alone, or what was sometimes called valor, which was often the offspring of fanaticism and was seen in the bar-

barian and the warrior, although bravery and valor were admirable always and at all times. The courage he referred to was the natural result derived from a mind the quality of which gave a man the determination, the courage, to do deliberately that which he knew to be his duty, no matter if by so doing he risked the loss of friends, home, country, or even life. To a man with such a mind nothing was higher than truth itself, nothing more noble than to do right. It was to men endowed with such a quality of mind, men who dared to advocate and fight for truth in opposition to all the powers of wealth and precedent, that the world and mankind to-day owed many of its most useful and valuable possessions. Without this splendid character, which belonged to and went along with true manhood, how little there would be of note and interest in the history of medicine! Without it, who would have dared to desert the old way, go contrary to the teachings of so-called authorities, and advocate and practice that which was new to all other men and which had no history, no indorsement? In the practice of medicine and surgery, the speaker believed, there was no higher authority than the physician in attendance upon a patient whose disease he understood, of the pathology and ætiology of which he was informed, and who had a knowledge of the effect produced by the remedies he proposed to use. It was true there were those who might teach what they deemed to be true to-day, but who would have the temerity to say that such teaching would always be right? Knowledge gave courage. It would be conceded by everybody that the physicians of to-day were more thoroughly educated than those of any previous time, and that tradition, superstition, and precedent had now less to do with the practice of medicine than at any time since the art and science of medicine and surgery had been studied and practised by man. Nevertheless, it required courage, even to-day, for a physician to adopt some new or original method of treating disease, some method not recommended or laid down by so-called authorities. If a consultation should be required and a less enterprising, less competent man be called in, and he should pronounce the treatment an experiment, one unheard of and not indorsed by the authorities, how long would it take for the affair to be published among those upon whom we depended for living? Without courage on the part of some men, would anæsthesia be what it was to-day?

Had it not required courage of the noblest and grandest type to lead McDowell in that little Kentucky town nearly ninety years ago to prepare deliberately for and then do successfully the first real ovariotomy? Would a weak man have been the first to do such an operation? It was easy to follow, but it required courage to lead. Without a single authority to guide him, without a precedent, and with the traditions of the past and the teaching of the times against him, he, an obscure surgeon, but one with a heart big enough to throb for all suffering mankind, had risked everything because he knew he was right, knew he must act, and act at once, in order to give his patient the only chance for her life. He had acted without fear and with courage, and his name was revered by all who were arrayed against disease and human suffering.

The country doctor who traveled through all kinds of weather, over all kinds of roads, and at all times of the year, day or night, was entitled to the homage of his fellow man. Oftentimes with no friendly brother to aid him, without the necessary instruments, without precedent or previous experience to guide him, without the time or opportunity to consult even the small library he owned at home, he was compelled to act alone, promptly and courageously, if he was to save the life fast passing away before him.

The life of the earnest and true physician everywhere was one of sacrifice, of labor, of worry, and of courageous action.

To the lover of history, whether of medicine, of men, or of nations, away back in the past, along the highway which showed the march of progress, might be seen standing like sentinels the men whose names were blazoned upon every epoch of advance. They marked the course all mankind had had to travel onward and upward out of the chaos of the past, the superstition and ignorance of times gone by, into the brightly illuminated day of modern progress and civilization. In the far distant future, by him who loved to read the history of men, what names known among us to-day would then be remembered and cherished?

Let us hope that out of the list of bright, energetic, and intelligent medical men in the proud State of Oregon there might be some whose names would not be forgotten, but that he who read the history of medicine and of men would then be pleased to know that Oregon had done her part toward alleviating human pain and suffering.

The Pathology of Some Unusual Conditions in Strangulated Hernia.—Dr. F. Cauthorn, of Portland, related the histories of several cases to illustrate a point in regard to the reduction of strangulated hernia *en masse*. In the light of his experience, the speaker was disposed to believe that the truss was an essential factor in the pathology of such cases. He made a special point of the value of percussion in the diagnosis of internal strangulation, for by this means, he was satisfied, a diagnosis could be made when the condition would otherwise remain a matter of conjecture. After a normal reduction the percussion note would be resonant; if there was internal strangulation the note would be dull.

Dr. W. E. Carrl, of Oregon City, had had a recent experience with a case where percussion would not substantiate the diagnosis of strangulated hernia; the patient was syphilitic and there was dullness over each inguinal region. It had been diagnosticated by another physician as double inguinal hernia, and the patient sent from the country for operation. No one would be justified in using taxis or any other method for several hours.

Alkaloidal Medication.—Dr. T. C. Humphrey, of Portland, read a paper on this subject. It was said by some that dosimetry bordered on homœopathy because little pills were used and could be dispensed by the physician. Others believed that alkaloids were dangerous medicines. So they were in the hands of the uneducated, and so were any medicines except homœopathic remedies. The danger was removed by knowledge sufficient for a proper diagnosis and by an understanding of the physiological action of medicines. There was no recognized dose, for no one could positively tell how much of a given remedy would be required to relieve a given symptom; therefore minimum doses should always be given and frequently repeated until the desired effect was obtained. Those physicians who objected to alkaloidal granules, which contained certain known quantities, did not object to giving infusions, tinctures, fluid extracts, and solid extracts, all of which must contain alkaloids in unknown quantities. The speaker did not see the advantage of giving the crude drug in tablespoonful doses when we could obtain better results with a sugar-coated pellet which was not disgusting to the patient. He had been using the alkaloidal system for several months and was very well pleased with the results obtained. He was confident that it was a step in the right direction. It gave us the opportunity of carrying a stock of medicine in so small a space that we were able to meet the immediate demand of almost any case without having to send a long distance to receive only a poor substitute for what we had prescribed. The medicines were equally pleasant as homœopathic pills, and at the same time we knew that we were giving just what the patient should have, and we also felt that we were prepared at all times to cope immediately with acute attacks which demanded active treatment.

Dr. Robinson had used alkaloidal medication for about six years. In country practice he could not do without it, for it was impossible to get a prescription compounded. It was easy of administration and convenient. The only requisite was an absolute diagnosis.

Dr. Doane was heartily in favor of adopting any measure that would be more efficient and easier of administration. It was well known that the crude drugs were not always reliable.

Dr. Walls said that he was able to recommend very highly the tablet triturates of Parke, Davis, & Co. He had employed them for some time and had found them the most satisfactory medicines.

Combined Taxis in Inguinal Hernia.—Dr. G. M. Wells, of Portland, said that there was hardly anything in the practice of surgery which called for such immediate and positive remedy as a hernia approaching strangulation. He related two cases to illustrate the practicability of combined or rectal taxis.

Case I.—The patient was a man, thirty-five years of age, with a right inguinal hernia of twenty-four hours' duration. All the known methods of reduction had been employed without avail. When the patient was put under anæsthesia for radical operation, it occurred to the speaker to try what could be done by rectal taxis combined with the usual methods. The middle and index fingers of the right hand were passed up into the rectum, pushing toward the internal ring; and by pressure on the abdomen over the ring with the left hand, and making gentle manipulation, the protruding gut perceptibly gurgled and in a few moments was reduced.

Case II.—A man, sixty years old, who had worn a truss for several years, one morning found his hernia irreducible. All ordinary taxis had failed, when chloroform was given and the finger passed up the rectum, but, the patient being very fleshy, the finger could not be made to reach the internal ring. A metallic case-knife was secured, the blade was covered with gauze and then passed up the rectum to the internal ring, guided by the finger, and after careful bimanual manipulation for a few moments the gut returned into the abdomen.

The speaker was well aware that two cases were not sufficient to establish the value of any method, but the facility with which these herniæ had been reduced, after resisting the ordinary taxis, induced him to believe that the profession had failed to properly estimate the value of combined taxis in inguinal hernia. In order to further test the practicability of combined taxis, the speaker had made some demonstration on a male cadaver. It had been found that, on passing the middle and index fingers deep into the rectum, they could easily be felt by the left hand depressing the abdominal wall, two inches above the internal ring, also that a large male sound or other similar appliance inserted into the rectum would bring into reach parts otherwise inaccessible and also serve as a point of resistance to the yielding abdominal walls. It had also been ascertained that the right and left rings were equally accessible by the fingers or sounds *per rectum* for bimanual manipulation.

Dr. Cauthorn had been very much interested in the studies on the cadaver. He had made some investigations himself to ascertain the exact distance of the anus from the internal ring; by pressing well up and making firm pressure from without, he could bring the anus within three quarters of an inch of the internal ring. He had been surprised to find such resiliency of the anus or rectum; it could be made to reach across the true pelvis. While there was no doubt of the practicability of the combined method, the same objections existed in regard to it that did to other methods—that was, "not good unless done early." It or any other method was not to be mentioned with the advantages of the open incision.

Dr. Holmes thought that the method might be accompanied with danger. He should hardly feel like groping about in the bowels and using force.

Dr. Doane said that, while the demonstration on the cadaver showed that the ring could be reached, he was not sure that this could be done on the living subject. He thought that there would be so much more resistance in the tissues. He had had cases where all known manipulation had been tried and given up, and spontaneous restoration had taken place. He had never been able to account for such things.

Dr. Fulton was opposed to taxis in any way, though it had seemed to him that the method of Dr. Wells assisted reduction simply by making the abdominal ring tense, and might be of benefit in that way.

Dr. Wells was satisfied that this was the best method to pursue with young children before placing them under the knife. He was not afraid of traumatism; he would rather rupture the rectum and reduce the hernia than do the radical operation. As to the resistance of the tissues, he thought that the dilatation would be great under anæsthesia. He exhorted the profession to try this method before resorting to the knife.

Officers for the Ensuing Year were elected as follows: President, Dr. O. D. Doane, of The Dalles; vice-president, Dr. F. M. Robinson, of Beaverton; secretary, Dr. E. F. Tucker, of Portland; treasurer, Dr. Mae H. Cardwell, of Portland.

Book Notices.

A Treatise on the Nervous Diseases of Children for Physicians and Students. By B. Sachs, M.D., Professor of Mental and Nervous Diseases in the New York Polyclinic, etc. New York: William Wood & Co. Pp. xviii–666. [Price, $5.]

Dr. Sachs's work will prove a very useful one to the student of the general diseases of childhood as well as a valuable addition to neurological literature. Although any book on nervous diseases contains, of necessity, the description of them as they occur in the child, the author's wide experience in nervous pædiatrics, and his extensive researches in nervous pathology, particularly in the branch of cerebral diseases, have enabled him not only to write a good text-book, but to explain many confusing and disputed conditions.

The opening chapter treats of methods of examination, craniometry, and the development of the normal child. In the chapter on convulsions the variety of causes to which they may be due is pointed out and a word of caution is given against too hasty diagnosis.

Sachs believes that epilepsy, as an idiopathic disease, is much rarer than is generally supposed, careful inquiry and thorough examination often revealing some antecedent cerebral lesion, although the paralysis and other symptoms have disappeared. The surgical treatment of epilepsy should be preventive—*i. e.*, at the time of an injury rather than after epilepsy has developed.

Many clinicians will differ with Dr. Sachs on his statement of the rarity of true hysteria, even in the adult, in this country. He states that at the New York Polyclinic it is one of the rarest diagnoses made. While it is much less common here than in Europe, there are certainly too many instances of hysteria in New York, with areas of anæsthesia and other typical symptoms, for hysteria to be looked upon as a curiosity. It is rather to be regretted that the author has retained the term hystero-epilepsy. As has been pointed out by Gilles de la Tourette, to cure the symptom-complex hystero-epilepsy is begging the question, for the disease is either hysteria or epilepsy, or the two diseases occurring simultaneously in the same individual. Although in many cases the diagnosis presents the greatest difficulties, nothing is gained by an indefinite nomenclature. As the author uses the term, hystero-epilepsy indicates the *grande attaque* of the French.

In the treatment of chorea the author insists upon rest in bed as the best means of curing the disease.

Under the ætiology of multiple neuritis attention is called to the danger attendant on giving large doses of arsenic (in chorea, etc.), and there are also laid down the various modes of entrance of lead into the system.

The anatomy, physiology, and diseases of the spinal cord receive careful and thorough attention. The cerebellar type of hereditary ataxia (type Nonne-Marie) is described.

Chapter XXXIII is devoted to the consideration of the numerous varieties and types of muscular atrophies, and the following chapter to the malformations of the spinal cord.

Under the anatomy and physiology of the brain the author carefully discusses the cerebral circulation. Meningeal hæmorrhage in the child is much more frequent than intracerebral hæmorrhage, but the occurrence of spontaneous intracranial hæmorrhage in children has yet to find a satisfactory explanation.

It is with the infantile cerebral palsies that Dr. Sachs's name has long been especially associated, and his description of them in this book is very complete and satisfactory. He has long maintained not only that these infantile hemiplegias were often overlooked by physicians in general, but also that they were frequently the causes of subsequent diseases—such as epilepsy—where the pre-existence of a cerebral lesion was not suspected. This view is now receiving very general acceptation. In 1884 Strümpell declared that acute infantile spastic hemiplegia was due to a primary encephalitis, affecting the gray matter of the brain, and proposed the term polio-encephalitis as the cerebral counterpart of poliomyelitis. Later investigations have shown that encephalitis is the rarest of the causes of infantile hemiplegia, the commonest being for the acquired forms, hæmorrhage, thrombosis, and meningitis. Many cases of so-called chronic chorea are dependent upon an old hemiplegia.

The book concludes with a description of idiocy and imbecility and of insanity as it occurs in childhood. Insanity in the child resembles closely that of the adult. Hallucinations are possible in very young children. In the first few years of life delusions can not exist, and subsequently, when they do occur, will be largely concerned with the child's own individuality and its relation to the family, its teacher, and its God.

The book is well got up and has but few typographical errors. Many of the photographs illustrative of clinical types are new, though most of the diagrams are familiar. Full lists of bibliographical references are added at the end of each chapter.

BOOKS, ETC., RECEIVED.

Traitement des rétrécissement par l'électrolyse linéaire. Par le Dr. J. A. Fort, professeur libre d'anatomie à l'École pratique de la Faculté de médecine de Paris, etc. Paris: G. Masson, 1894. Pp. v–4 to 553.

Annual of the Universal Medical Sciences. A Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by Charles E. Sajous, M. D., and Seventy Associate Editors, assisted by over Two Hundred Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromolithographs, Engravings, and Maps. Volume I to V. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1895. [Issue of 1895.]

The Physical, Intellectual, and Moral Advantages of Chastity. By Dr. M. L. Holbrook. New York: M. L. Holbrook & Co., 1895. Pp. 4 to 120. [Price, $1.]

An Atlas of the Fertilization and Karyokinesis of the Ovum. By Edmund P. Wilson, Ph. D., Professor of Invertebrate Zoology in Columbia College. With the Co-operation of Edward Leaming, M. D., F. R. P. S., Instructor in Photography at the College of Physicians and Surgeons, Columbia College. New York and London: Macmillan & Co., 1895. Pp. vi–32.

Whittaker's Anatomical Model. A Pictorial Representation of the Human Frame and its Organs. With Descriptive Text by Dr. Schmidt. English Edition by William S. Furneaux. New York: Thomas Whittaker, 1895.

The Anatomy of the Human Head and Neck. Graphically Illustrated by Means of Superimposed Plates. With Descriptive Text by Dr. Schmidt. English Edition by William S. Furneaux. New York: Thomas Whittaker, 1895.

An Essay on Diphtheria and its Specific Treatment. By John Pirnat, M. D., of Evansville, Ind.

Geschichte der jüdischen Aerzte. Ein Beitrag zur Geschichte der Medicin. Von Dr. Richard Landau. Berlin: S. Karger, 1895. Pp. 3 to 144. [Preis, 3*M.*]

A Contribution to the Study of the Ætiology of Membranous Rhinitis. By Mazyck P. Ravenel, M. D., Philadelphia. [Reprinted from the *Medical News.*]

Three Cases of Enucleation of the Eye, with Remarks. By Leartus Connor, M. D., Detroit. [Reprinted from the *Harper Hospital Bulletin.*]

Two Fatal Cases of Sausage Poisoning. By Louis J. Mitchell, M. D., and John A. Wesener, M. D., Chicago. [Reprinted from *Medicine.*]

Flat-foot. Its Correction and Comparative Study with the Foot of the Orang, Chimpanzee, Gorilla, and Baboon. Lupus Treated by Galvanism. Double Club Feet and Hands; its Treatment. By B. Merrill Ricketts, M. D., Cincinnati. [Reprinted from the *Journal of the American Medical Association.*]

Notes on the Repair of Rupture of the Perinæum through the Sphincter Ani. By W. L. Burrage, M. D., Boston. [Reprinted from the *Boston Medical and Surgical Journal.*]

Cases of Retrodeviation of the Pregnant Uterus, with Remarks. By W. L. Burrage, M. D. [Reprinted from the *Boston Medical and Surgical Journal.*]

Clinical Notes on Psoriasis, with Especial Reference to its Prognosis and Treatment. By L. Duncan Bulkley, M. D. [Reprinted from the *Transactions of the Medical Society of the State of New York.*]

Ueber das Paranuclearkörperchen der gekernten Erythrocyten, nebst Bemerkungen über den Bau der Erythrocyten im Allgemeinen. Von Dr. Ludwig Bremer, St. Louis. [Separat-Abdruck aus dem *Archiv für mikroskop. Anatomie.*]

Autoskopie der Luftwege. Von Dr. Alfred Kirstein.

[Sonder-Abdruck aus der *Deutschen medicinischen Wochenschrift.*]

A Case of Hydrosalpinx. Removal of the Right Tube and Ovary without Rupture of the Sac. By Hunter Robb, M. D. [Reprinted from the *Western Reserve Medical Journal.*]

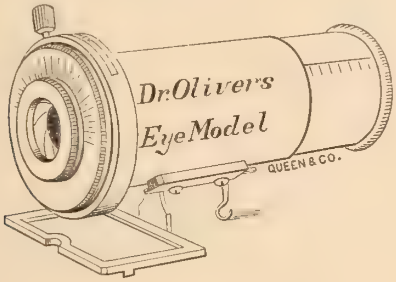
New Inventions, etc.

ADDITIONAL NOTE UPON AN ARTIFICIAL EYE INTENDED FOR THE STUDY OF OPHTHALMOSCOPY AND THE OBJECTIVE DETERMINATION OF AMETROPIA.

By CHARLES A. OLIVER, M. D.,
SURGEON TO WILLS'S EYE HOSPITAL; OPHTHALMIC SURGEON TO THE PHILADELPHIA AND PRESBYTERIAN HOSPITALS, ETC.

The accompanying cut serves to show the appearance of the eye model described by the writer in a former issue of this journal.

It will be noticed that the contrivance is compact, and that every portion of its working parts is so arranged that any desired change can be effected with the utmost facility.



The apparatus has been in frequent use by the writer and several of his friends since the appearance of its first description, and with all has been found eminently satisfactory.

Miscellany.

An Animal in which Prolapsus Vaginæ is Normal.—In the October number of the *Entomological News* Dr. C. Wardell Stiles says that Professor John B. Smith recently sent him some parasites (*Sphærularia bombi*) from the body cavity of the humblebee for determination, and requested him to write a short account of them for publication in the *Entomological News.* He accedes to the request all the more willingly as, so far as he has been able to find, this curious parasite has never been described in American literature, although several records of the presence of a parasite in the humblebee occur in American journals which undoubtedly refer to this particular species.

The parasite in question, he says, is one of those curious forms in which what frequently occurs to a moderate degree as a pathological process in higher animals takes place to an enormous extent as the normal condition of affairs; it is, further, an extremely interesting form, as a particular set of organs normally undergoes a hypertrophy entirely out of proportion to its original size, or, in fact, to the size of the original organism. A third point in connection with the worm is that it represents one of those peculiar cases of parasitism in which only the female sex lives a parasitic life.

The worm was discovered in 1838 by Léon Dufour, who was inclined to look upon it as an insect larva. Von Siebold, however, afterward showed that true nematodes developed from the egg of this monstrosity, and its systematic position was thus made somewhat clearer. The worm was then observed by various workers, but no clear explanation of the paradoxical organism could be given. Lubbock afterward noticed that an almost microscopic nematode was frequently found attached near one end of the parasitic structure, and Schneider suggested that the larger tubelike structure was an organ which had become more or less independent of the original body. Professor Rudolf Leuckart (1887), to whom science owes the solution of so many of the riddles which confront the helminthologist, says Dr. Stiles, finally made a very thorough study of the worm, together with another worm showing the same tendency to a somewhat lesser degree, and succeeded in clearing up this "gynæcological" mystery.

The following is an abridged account of the parasite, and those who desire to examine more closely into the details of the subject are referred by Dr. Stiles to Leuckart's magnificent monograph.

The males and females of *Sphærularia bombi* are almost microscopic; they live in moist earth and, although their intestinal system is not of such a structure as to allow of their taking food, they may live for months, probably using the reserve material stored up during their intra-uterine existence. Their reproductive organs come to functional development and the animals copulate; after copulation the males die, the females alone living to represent the species.

The females then watch their chance to obtain a "widow's home" for the winter; they enter the female humblebee which is about to hibernate, and in the body cavity of this insect they continue their curious development. The vagina gradually "evaginates" through the vulva, taking with it the entire sexual apparatus and the greater part of the intestine; this evaginated portion develops to an enormous extent, attaining in many cases twenty millimetres in length by one millimetre in breadth, but remains attached for a long time to the almost microscopic body of the original worm at the vulva, or possibly it would be better to say that the body of the female remained attached at the vulva to its evaginated genitalia! Finally, the body of the worm falls, and the genitalia continue to live an independent existence, nourished by osmosis in the body cavity of the bee. It is estimated that the genitalia have hypertrophied 60,000 times their natural size, and have become of from 15,000 to 20,000 times the size of the original female.

In the mean time numerous embryos have developed within the uterus; these embryos fall into the body cavity of the bee and become free, probably boring through the intestinal wall of the host and being passed, or in some cases by the death and decay of the bee. Upon becoming free, they develop their sexual organs and copulate; the males die, and the females await the opportunity of obtaining a winter home in the next winter's female humblebees.

It is almost needless to add, says Dr. Stiles, that the presence of these parasites, especially in large numbers, brings about an atrophy of some of the organs, more particularly of the internal genitalia, of the host, and this causes the female bees to remain more or less sterile.

The parasite described (*Sphærularia bombi*) does not represent the only species of nematode in which we find these "gynæcological" conditions. Leuckart has described a parasite (*Atractonema gibbosum*) from the body cavity of the larva and pupa of a small *Cecidomya* which has a similar life history, but in which the prolapsus vaginæ occurs to a more moderate degree. Dr. Stiles has also frequently noticed prolapsus vaginæ in the genus *Oxyuris* (pinworms), more particularly in *O. ambigua*, found in rabbits (*Lepus cuniculus*). This condition, which is not infrequently noticed in the worms found in the intestines, can be brought about artificially by suddenly immersing the parasite in cold water.

Coxa Vara: Incurvation of the Neck of the Femur.—The *Presse médicale* for October 5th contains an abstract of an article from the *Münchener medicinische Wochenschrift* in which Dr. J. Leusser gives a detailed account of his observations in this affection, which is described under the name of coxa vara, and is, according to the author, much more frequent than is generally supposed. From an ætiological point of view, he says, rhachitis, first of all, should be considered as a factor in this affection, although it is especially frequent at the age of from thirteen to eighteen years. It is constantly found among the antecedents of patients, or, more frequently still, the marks of former attacks of rhachitis are found in the patients themselves. There may be in some cases tardy symptoms of rhachitis—that is, the manifestations do not reveal themselves during infancy, but develop about the age of puberty. Finally, there are other cases in which it may be a question of an isolated localized rhachitis, as in certain cases of genu valgum. Lauenstein has cited a case in which the deformed neck of the femur presented the characteristic lesions of rhachitis.

The anatomical lesion is constituted essentially by an incurvation of the neck of the femur, which is lowered and forms with the body of the femur an angle of ninety or even of sixty degrees. The neck is at the same time lengthened, sagging, and sometimes turned backward. The disease usually starts in an insidious manner, with transitory pains which at first occur in the thigh and radiate toward the knee and afterward become localized in the hip. The patient becomes fatigued easily when walking or standing. Rheumatic pains may be suspected or a passing fatigue, a supposition all the more natural as the general condition remains good and the patient does not feel sick. A physician is rarely consulted until after a slight traumatism occurs or the pains become very sharp and the lameness apparent. The patient rarely remains in bed. An examination of the patient usually shows that, when the affection is unilateral as well as when it is manifest on both sides, the great trochanter protrudes and exceeds by from one to seven centimetres the Nélaton-Rose line. This position of the great trochanter brings on a true shortening of the limb, which may be as much as seven centimetres. On the other hand, the lowering of the neck of the femur results in limiting the movements of abduction and sometimes those of adduction. Finally, in cases where the neck is also directed backward the internal movements of rotation, and sometimes the external movements, are found more or less limited.

Tumefaction of the region is absent and there is no fever. The pain is very slight and disappears after a rest in bed. Wasting of the limb is the rule, although it is usually slight.

The diagnosis is not difficult when the preceding symptoms are all present and associated with symptoms of rhachitis. The patient's age is also a very important diagnostic element. The diagnosis is particularly to be made from coxalgia in the first stages or cured, from osteitis deformans, from separation of the epiphyses, and from luxation, and this diagnosis is not difficult. In true coxalgia the symptoms are graver; the pain is sharp and becomes exaggerated even when the movements are passive; tumefaction of the articulation is rarely absent and fever is frequent; finally, the contractions and the pathological position of the limb are characteristics altogether peculiar to coxalgia, which are not found in coxa vara.

Osteitis deformans is an affection found in adults. In luxation the limb is immobilized, and the affection results from a traumatism, two elements which are wanting in coxa vara. The same thing may be said of the diagnosis from fracture of the neck of the femur, and from separation of the epiphyses.

The prognosis of coxa vara is not bad, as the patient's life is not threatened. Unfortunately, however, after the evolution of the rhachitic lesion, the limb remains in a defective position, with shortening accompanied by corresponding functional troubles.

The treatment should, in the first place, be directed against the rhachitic diathesis; tonics, such as cod-liver oil, etc., and strengthening diet should be prescribed. The surgical treatment consists in rest in bed, forced extension of the limb, massage, and the use of electricity, the two latter being directed against atrophy. When the patient is considered cured he should be advised to wear a thich-soled shoe to remedy as much as possible any shortening of the limb.

Strychnine in the Treatment of "Insolation" of the Eyes.—M. Sous, of Bordeaux, published an account of a case, which recently came under his observation, in the *Journal de médecine de Bordeaux*, an abstract of which appears in the *Revue illustrée de polytechnique médicale et chirurgicale* for September 30th. The patient, who was a captain in the navy, had exposed his eyes to a very bright light for a rather long time while taking some observations in mid-ocean at noon. Shortly afterward he noticed a marked trouble with his eyes, and in two months the visual acuity was 0·1 with central scotoma. The amblyopia was not of toxic origin.

In this case, M. Sous says, the affection made no progress after the first two months, and it might be considered as having been arrested, leaving only a certain inertia of the retina. The treatment employed by M. Sous, says the writer, consisted in stimulating the function of the weakened organ, and the following formula was prescribed: Distilled water, 150 grains; strychnine sulphate, 0·75 of a grain. Four drops of this liquid were injected in the left temporal region on the first day, and on the second day the same quantity was injected in the right temporal region. After the second injection the scotoma disappeared and the visual acuity rose. The injections were made alternately in each temple once a day, and they did not cause any pain. The sight rapidly became ameliorated, for after the eighth injection, the treatment having lasted for eight days, the visual acuity became normal and the patient was able to read the smallest characters at a distance of five metres.

The Rudolf Leuckart Celebration.—C. W. Stiles, Ph. D., of the United States Department of Agriculture, makes the following announcement in *Science:*

"It is the intention of the Leipsic committee to have a life-size marble bust of the Geheimrath made and to present it to him on December 13th, and it is understood that the bust will eventually be deposited in the university at Leipsic or in the Leipsic Gallery. The statue will be made by one of the most prominent sculptors of Germany, who attended Leuckart's lectures this last semester, unbeknown to the lecturer, in order to study his expression. The estimated cost is four thousand marks, of which about one thousand marks had been subscribed before September 1st. Should more money be collected than is necessary it will probably be spent for photographs of the bust which will be sent to persons who have forwarded subscriptions.

"The subscriptions thus far made vary from ten to two hundred marks, most of them being in sums of twenty to fifty marks.

"It is not intended to confine the subscriptions to Leuckart's pupils, for a number of other persons have expressed their desire to contribute. The Leipsic committee therefore extends a cordial invitation to all admirers of the Geheimrath to join in the celebration, and I would therefore urge all of Leuckart's pupils in this country to bring this circular to the attention of their scientific and medical friends.

"Subscriptions can be sent to Carl Graubner, as announced in the original circular, or to me. At the request of Dr. Simroth, the moving spirit in the undertaking, I have agreed to receive American subscriptions and forward the same in one sum to Leipsic."

The Influence of the Nervous System on the Function of the Mammary Glands.—The *Lyon médical* for October 13th contains a review of an article on this subject, published in a Russian journal, in which the writer states that M. Mironow undertook a series of experiments in regard to the innervation of the mammary glands of the goat and to the influence of the nervous system on their function.

In order to estimate the quantity of milk secreted in a given length of time, the author adopted Röhrig's method, which consists in introducing into the excretory canal of the goat a slender catheter provided with lateral openings and joined to an empty vessel. When the animal is immovable a continuous discharge of about two drops a minute is obtained.

It has been observed clinically, says the writer, that strong emotions provoke in nursing women a diminution and even a cessation of the lacteal secretion for a certain length of time. M. Mironow verified this by causing, with an uninterrupted electric current, among cows, an irritation of the saphenous nerve. This experiment was repeated twenty-four times on different animals, and was always followed by a considerable diminution of the quantity of milk secreted for a more or less extended length of time. In some the quantity secreted diminished from twenty-five to thirty per cent.

Irritation of the sensory nerves modifies the lacteal secretion, not only as regards quantity, but also as regards quality. The proportion of the solid residue shows an increase of from seven to seventeen per cent. over the original quantity. These modifications, says the writer, provoked by emotions or irritation of the sensory nerves, explain why the milk under such circumstances is badly tolerated by nurslings, and why it gives rise in them to gastro-intestinal troubles.

Unilateral section of the pudic nerve, according to the author, does not exercise any appreciable influence on the general quantity of milk given or on the quantity secreted by the glands on the side operated upon; section of the two nerves, on the contrary, diminishes it to the extent of fifty-seven per cent. In the same way section of all the nerves which lead to the mammary gland provokes a diminution of the lacteal secretion, whether in the entire gland or on one half if the latter only is operated upon.

In a recent experiment M. Mironow performed section of all the nerves leading to the mammary gland, and isolated the gland from all communication with the central nervous system. After having waited until all pathological symptoms in the interior of the gland or near it had subsided, he found that the secretory function of the gland had diminished from thirty-five to forty-five per cent.

In another series of experiments the author sought for the influence of parturition on the mammary gland that had been deprived of all connection with the central nervous system, and found that the lacteal secretion rapidly increased to five hundred and seventy cubic centimetres on the day of parturition; after that it increased to seven hundred cubic centimetres in one month and to eight hundred a month later.

From this, says M. Mironow, it may be supposed that not only do local agencies exist in the mammary glands, but also that pregnancy and parturition act on the centres and also on the tissues of the gland, not through the central nervous system, but probably by virtue of the chemical modifications which are produced in the fluids of animal organisms.

Suppurative Mumps.—The *Province médicale* for October 12th publishes an article on this subject by M. Barjon, who remarks that, with regard to the opinions of different writers, many deny the occurrence of suppuration in mumps, and all agree in recognizing the extreme rarity of this complication. M. Barjon cites three cases, of one of which he gives a detailed account. They occurred during an epidemic of mumps in May and June, 1895. In the first case nothing of any consequence presented itself; suppuration supervened during the course of the disease without grave symptoms. In the second case the abscess rapidly became gangrenous, eschars formed, and sinuses formed along the vascular sheaths; the general condition was adynamic, but there was not much elevation of temperature. The patient recovered. In the third case the patient entered the hospital on May 8th suffering with an acute affection which had begun with chills, lumbago, headache, and nausea without vomiting. There was a painful swelling of the right parotid gland and there was a tendency to œdema involving the face and the left eyelid; separation of the jaws was limited. There was no superficial redness and there was no redness of the pharynx, of the arch of the palate, or of the tonsils. There was nothing abnormal ascertained about Stenson's canal, in the heart, or in the lungs. There was slight dysphagia, but no angina or fever. During the three following days the swelling of the right parotid gland gradually diminished, and on the 11th it disappeared. On the left side, however, there was a painful swelling which persisted without diminution. On the 16th the patient spit up some pus, and, on pressing the left parotid gland, pus gushed out through Stenson's canal. There was still a total absence of superficial redness and of fever. On the 18th the patient complained of lancinating pains in the right parotid gland, and on examination a painful swelling was again found, although there was as yet no suppuration. On the left side the pain and the swelling diminished, but the discharge of pus continued. On the 20th it was ascertained beyond doubt that suppuration had finally set in on the right side. It was accompanied by an abundant flow of saliva, which was clear and serous and contained pus. From five to seven ounces of this saliva were collected during twenty-four hours. By the 31st the suppuration had dried up, the pain and the swelling had disappeared, and there was only a slight functional trouble with the jaws. During all this time, says the author, the patient's general health remained good, and there was a complete absence of fever. On the 16th of June she was dismissed cured.

A bacteriological examination revealed the existence of small chains of streptococci and especially staphylococci. A tube of bouillon was sown with the pus, which gave a thick, flaky culture in which a large number of the micro-organisms of the mouth were found.

Should these cases of suppuration, asks M. Barjon, be considered as special forms of mumps, or should we not rather consider them as a common secondary infection of salivary origin? Claisse and Dupré, he says, described these salivary infections and pointed out their mechanism. They insisted on the frequency of canalicular central ascending infection as compared with the rarity of circulatory peripheral infection of arterial or lymphatic origin.

Clinical observation has shown us, says M. Barjon, that in mumps suppuration is rare, not only near the parotid gland, but in all the other visceral and articular manifestations of the disease. Suppuration in orchitis is altogether exceptional; the same may be said of arthritis and of all the other localizations. On the other hand, we meet with secondary suppuration of the parotid glands, especially during the course of infectious diseases or in convalescence from them. Mumps is an infectious disease; the general symptoms, the fever in the beginning, and the many localizations show that it is not a simple local salivary infection, but a general infection passing very much beyond the parotid zone.

With regard to the pathological anatomy, says M. Barjon, Hanau has found the ordinary causes of suppuration, such as staphylococci and streptococci. He also affirms that the distinctly intracanalicular situation of the micro-organisms and of the inflammatory lesions of the glandular parenchyma leave no doubt as to the mode of infection of the gland or as to the canalicular ascending route that the pyogenic bacteria followed.

Bacteriology, says the author, has shown that the specific germ of mumps is not pyogenic. In every case of mumps, if an examination of the pus is made, the ordinary organisms of suppuration will be found. It seems, then, very probable, says M. Barjon, that we have to deal simply with a secondary infection independent of the primitive infection, and that the following conclusions may be drawn: 1. There does not exist, properly speaking, suppurative mumps. 2. Suppuration, when it does occur, is always connected with a secondary infection of salivary origin; it is a secondary suppurating parotiditis following a primitive specific parotiditis. 3. Buccal asepsis is sufficient to prevent this complication. For that purpose it is better not to use strong antiseptics, for they may provoke erosions of the mucous membrane and in this way facilitate the infection instead of preventing it. Boric-acid solutions or, better still, very hot water should be employed.

The New York State Association of Railway Surgeons.—The fifth annual meeting will be held in New York on Tuesday, November 12th, under the presidency of Dr. R. S. Harnden, of Waverly. The programme includes the following papers: The Preparation of the Patient for Amputation, with Remedies Used or Useful in the Treatment of Shock, by Dr. Frank H. Caldwell, of Sanford, Fla.; Physical Endurance, by Dr. C. M. Daniels, of Buffalo; Multiple Synchronous Amputations, by Dr. W. L. Estes, of South Bethlehem, Pa. (discussion to be opened on the foregoing papers by Dr. J. B. Murdoch, of Pittsburgh, Pa., and Dr. N. Y. Leet, of Scranton, Pa.); Important Unsettled Questions in Railway Surgery, by Dr. M. Cavana, of Oneida, N. Y.; the president's address, by Dr. R. S. Harnden, of Waverly; The Responsibility of the Railway Surgeon from a Lawyer's Standpoint, by Judge A. H. Dailey, of Brooklyn (to be discussed by Dr. George Chaffee, of Brooklyn, and Clark Bell, Esq., of New York); The Importance of a Physical Examination of an Applicant before he is placed in the Railway Service, by Dr. R. H. Reed, of Columbus, Ohio (to be discussed by Dr. G. P. Conn, of Concord, N. H.); What is Shock and how shall we Treat it? by Dr. R. H. Cowan, of Radford, Va.; Arterial Anastomosis, by Dr. F. H. Peck, of Utica; First Aid to the Injured, by Dr. C. S. Parkhill, of Hornellsville; Shock and its Proper Treatment, by Dr. W. V. R. Blighton, of Tonawanda; Why Amputate? by Dr. Stephen Smith, of New York; When shall we Amputate? by Dr. J. B. Murdoch, of Pittsburgh, Pa.; Where shall we Amputate? by Dr. J. S. Wight, of Brooklyn; and How to Amputate, by Dr. J. A. Wyeth, of New York.

The Medical Association of Oklahoma Territory.—The second session will be held in Oklahoma City, on Thursday, November 14th, under the presidency of Dr. Thomas A. Cravens, of Oklahoma City. Besides the annual address by the president, the programme includes the following titles: Gynæcology as Influenced by Climate, by Dr. Charles W. Fiske, of Downs; Idiopathic Iritis and Coincident Absorption of Secondary Cataract, by Dr. William Clarence Boteler, of Kansas City, Mo.; The Use and Abuse of Antipyretics, by Dr. William D. Ezell, of Newkirk; Oklahoma as a Health Resort for Pulmonary Affections, by Dr. James D. Kerodle, of Clarkson; The Administration of Strychnine in Fevers, by Dr. Gottlieb Opplinger, of Guthrie; Prolapse of the Female Pelvic Organs, by Dr. Thomas M. Cullimore, of Perry; Enteric or Typhoid Fever, by Dr. C. B. Bradford, of Oklahoma City; The Relation of Physicians to Sanitary Laws, by Dr. J. H. Miller, of Newkirk; The Use of Color Reagents for the Diagnosis of Stomach Disease, with Clinical Demonstration, by Dr. Herman E. Pearse, of Kansas City, Mo.; Extemporized Instruments and Appliances in Emergencies, by Dr. F. S. Dewey, of Oklahoma City; The Attitude of the Medical Profession toward Patent and Proprietary Medicines, by Dr. Charles Smith, of Guthrie; and Cerebral Localization, and what it Teaches, by Dr. John Punton, of Kansas City, Mo. A paper will also be read by Dr. Delos Walker, of Oklahoma City.

The First Cry.—"Olshausen* opposes the position of Ahlfeldt, who claimed that certain movements which can be felt within the uteri of pregnant women were produced by feeble respiratory movements on the part of the child, and that the inspiration which we call the first of a newborn child is not really the first, but the first deep inspiratory movement. Olshausen holds that the movements felt by Ahlfeldt were the aortic pulsations transmitted through the uterus to the abdominal wall. He also opposes the view taken by Schwartz that the cause of the first inspiration is dependent upon the interruption of the placental circulation, and on the basis of numerous observations has come to the conclusion that apnœa alone does not determine the first respiratory movement, but that in head presentations its cause lies in the great compression to which the thorax is subjected during the passage through the vagina, and its sudden release at the moment the breech is born. In this manner the end of parturition brings with it, under normal conditions, a naturally produced movement of artificial respiration. In breech presentations and Cæsarean sections this 'artificial respiration' will not be present, and for this reason children coming into the world under these conditions are apt to lie in an apnœic condition for some time before normal respiration is established.

"This sudden release of pressure might well account for the recognized danger in breech presentations of respiratory movements taking place upon the escape of the body and before the head is released from the vagina, which in some cases have caused death from inhalation pneumonia."—*Boston Medical and Surgical Journal.*

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* *Berliner klin. Woch.*, 1894, No. 48.

Original Communications.

A STUDY OF THE WEAK FOOT,

WITH REFERENCE TO ITS CAUSES, ITS DIAGNOSIS, AND ITS CURE; WITH AN ANALYSIS OF A THOUSAND CASES OF SO-CALLED FLAT-FOOT.*

By ROYAL WHITMAN, M. D., M. R. C. S.

The function of the foot is to bear the weight of the body and to serve as a lever for its work. Normally this weight and strain fall through the centre of the foot and are balanced there by muscular activity. If for any cause this normal relation is disturbed, the foot is thereby placed at a mechanical disadvantage in the performance of its functions, for in spite of the accommodative power of Nature to disease and deformity its mechanisms are subject to the same laws that govern other machines, a fact that must be appreciated if weakness is to be recognized and deformity overcome. If the foot, for example, is to perform its functions, its component parts must be in normal condition and held in proper relation to one another, the muscular power must be sufficient, and the strain and weight must not be too great for the strength of the mechanism. If any one of these conditions is lacking, the foot becomes unbalanced and ineffective as a lever; in other words, it loses its spring and elasticity, the ability to raise and propel the body.

When the foot ceases to act or to be used as a lever, it loses the support and control of the muscles which have balanced the weight in its proper relation to it, and the attitude of passive support must be assumed, in which the burden falls on the inner side and the strain upon the ligaments. Whether this attitude is voluntarily assumed or whether it is forced upon the foot, the disuse of function and the mechanical disadvantages to which the foot is subjected predispose to weakness and deformity.

The type and exemplification of the weak foot is the so-called flat-foot, which not only has lost its function as a lever, but is a source of discomfort and pain when used at all.

Flat-foot, when fully developed, is practically a dislocation, in which the astragalus has slipped downward and inward from the remainder of the foot to which the muscles are attached; this causes the bulging on the inner side, the most noticeable and characteristic sign of the affection. When such a foot is in use it is apparent that the deformity is made up of three elements:

1. The weight of the body falls upon its inner side; the foot is in a position of valgus.

2. The leg resting on the displaced astragalus turns in; the foot turns out, so that the line of strain through which the power is transmitted to the fulcrum no longer falls through the centre of the foot, but to its inner side; the foot is abducted or everted in its relation to the leg.

3. There are broadening and flattening of the arched portion of the foot; the foot is flat (Fig. 1).

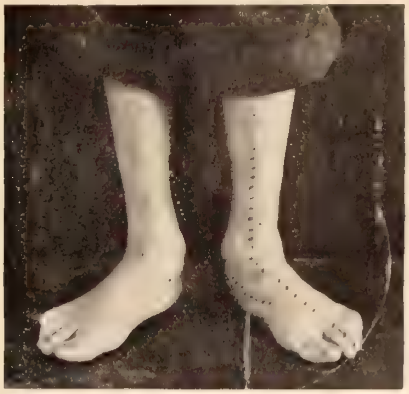

Fig. 1.—Typical flat-foot of moderate degree, illustrating the component elements of valgus, abduction and depression of the arch.

As a consequence of the displacements, the foot, considered as a machine, is twisted and out of gear, for the relation of the joint surfaces is so changed that motion is restricted and normal muscular action impossible. The foot is weak and vulnerable, constantly exposed to overstrain and injury; thus the deformity is usually progressive and is accompanied by spasm, secondary contraction, and atrophy of muscles, and by similar nutritive and accommodative changes in the bones and ligaments.

The compound deformity of flat-foot may be regarded simply as the development of the weak foot. Weak foot may be found in every grade, from the foot intrinsically strong which is doing its work at a disadvantage because of improper attitudes unwittingly assumed, to the foot intrinsically weak or overburdened, and therefore obliged to assume the improper attitude.

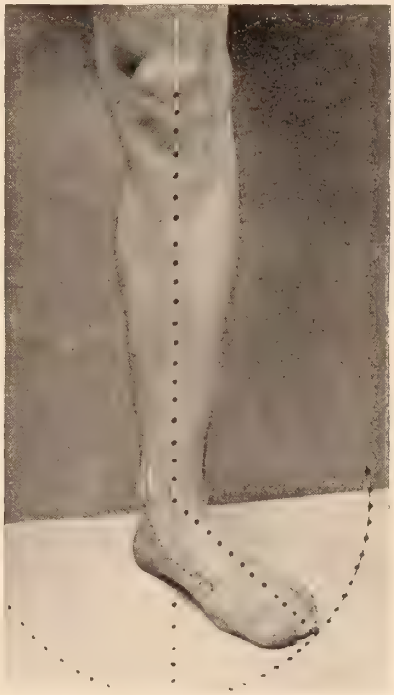

Fig. 2.—An attitude that simulates flat-foot.

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* Read before the American Orthopædic Association, September 18, 1895.

As flat-foot is the further development of the weak foot, so the weak foot is often in its appearance and function the exaggeration or improper use of a normal attitude. To illustrate this fact, let one evert the foot and bear the entire weight of the body upon it, the leg being flexed somewhat forward to bring the weight over the head of the astragalus, and an approximation to the appearance of flat-foot may be produced; the inner border of the foot becomes slightly convex, the arch is lowered, and the line of strain is displaced to the inner side (Fig. 2). Yet this and a much greater burden may be borne without a semblance of deformity if the weight is thrown to the outer side of the foot, and the great toe pressed firmly against the floor (Fig. 3).

This attitude illustrates the voluntary protection in which the weight is balanced by muscular activity. In the first illustration the strain falls on the inner, elastic, and mechanically weaker side, for the os calcis, hollowed out on its inner side for the passage of vessels and tendons, occupies a position of unstable equilibrium (Fig. 4); so that the weight of the body tends to tip it over into the flat-foot position of valgus (Fig. 5). Under the same influence the astragalus rotates downward and inward, still further increasing the instability of the os calcis. In this position the foot receives but little aid from the muscles, so that exaggeration to deformity is only prevented by the ligaments and by the shape of the articular surfaces; thus weakness may be induced by the excessive use of a normal attitude, and not only by that, as in long standing, but also by its improper use in work that demands active motion, and in which this active motion and alternation of postures, and thus relief from constant strain, are essential to its integrity. For, although the work performed in walking is greater than that required for standing, yet long standing is the more fatiguing. The fatigue of long standing is relieved by walking, but if the passive attitude of standing, or an approximation to it, is still used in walking, the foot is subjected to constant and unrelieved strain.

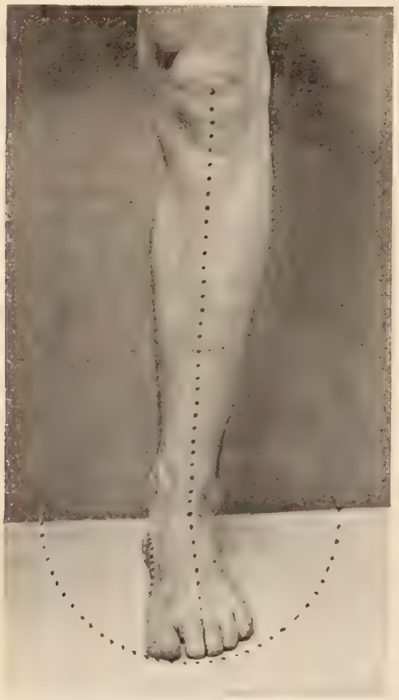

FIG. 3, compared with Fig. 2, will illustrate the voluntary protection of the foot from overstrain.

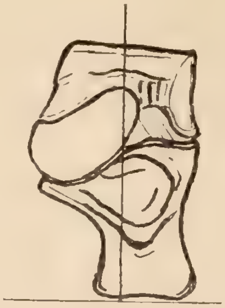

FIG. 4.—The relation of the astragalus to the os calcis.

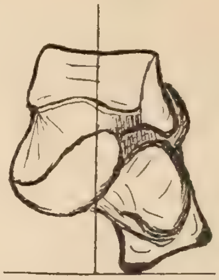

FIG. 5.—The relation of the astragalus and os calcis in flat-foot.

As an illustration of the protection afforded by muscular activity, the gait of one who walks properly should be noticed. The foot is advanced almost in the line of the walk, with but slight eversion, so that the weight, falling momentarily on the heel, follows the outer or strong side of the foot around to the great toe. As the leg is extended the body is raised on the foot, and as its outer border, from the heel to the head of the fifth metatarsal bone, is shorter than the corresponding inner border, the fore foot is mechanically or involuntarily turned in or adducted, so that the weight is thrown off to the outer side at the moment of greatest strain. At the same time the muscles passing behind the inner malleolus, working to advantage, give the final push or spring to the step. The gait is elastic and graceful. There is the proper alternation of attitudes, for at every step the foot assumes the posture most opposed to passive weight-bearing and flat-foot, and at every step there is active exercise of the muscles that protect the foot (Fig. 6).

Let this be contrasted with the slouchy, cloddy, ungraceful, jarring walk of the weak-footed or flat-footed person, in which the everted foot is lifted and set down as a lifeless mass, its normal motion replaced by exaggerated flexion of the knee, the leg never completely extended, the weight borne on the heel, the strain falling on the weakest part of the foot, and the loss of the function of leverage and the use of passive attitudes in work that demands muscular activity will have been sufficiently illustrated.

In the developed deformity normal use of the foot is, of course, impossible, and inherent weakness of structure or other cause may make the improper attitude necessary, but just as the deformity or the weakness induces the gait and attitude, so the assumption of the improper attitude, whether by inclination or force of circumstances, may lead to and aggravate weakness and deformity (Fig. 7). The facts that such attitudes are unnecessarily assumed through ignorance or want of training, and that the weak foot may be protected in its weakness by the voluntary avoidance of postures that place it at a disadvantage, are of the greatest importance in treatment.

The safeguards of the foot are muscular activity, perfect freedom of painless motion, and normal alternations of attitude. On looking at the foot as a familiar machine, some of the common causes of limitation of its activity, its leverage, and balance will be very evident. The custom of cramping the toes in tight shoes and perching the foot on an insecure heel is certainly not conducive to the well-being of the machine.

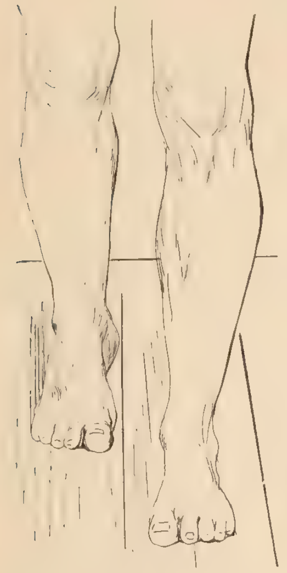
Fig. 6.—To illustrate the involuntary adduction of the fore foot in the proper attitude.

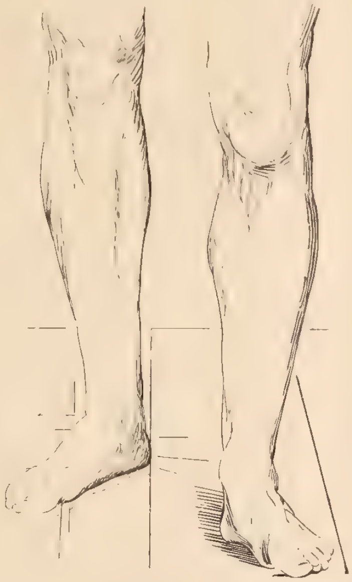
Fig. 7.—The improper attitude of eversion of the feet.

Both the great and little toes are provided with special muscles to aid in balancing the weight, and the great toe is also a powerful brace to the arch and an aid in the work of leverage. Yet the muscles are often atrophied by disuse and the toes distorted by compression, while the incidental corns and bunions make active motion of the foot painful, and it is avoided by assuming the passive attitude of eversion or by disuse of the active lift of the calf muscles.

The joints of the foot may be weakened by the local effects of gout or rheumatism, or sprains or similar diseases or injuries, and the improper use of the foot necessary during the stage of actual disease or weakness may persist, either as a habit or because of more or less disturbance of structure, after the cure or subsidence of the original cause.

Distortions of the leg or fractures about the ankle may displace the weight of the body to the disadvantage of the foot, or the arch may be directly broken down as in falls.

The foot may be overworked, as in occupations that require long standing, like those of bakers, barbers, grocers, and the like, or overweighted by the burdens put upon it.

As the foot is the mechanism subjected to the greatest strain, it is usually the first to show the effect of weakness on the resumption of work after acute or chronic disease or during childbearing.

Predisposing causes are often apparent in childhood, in general weakness and relaxation of tissues, in the inherited vulnerability and predisposition to postural deformities with which flat-foot may be associated. Weakness due to rhachitis or other forms of defective assimilation may prevent the proper use of the foot, or the weakness or deformity may be congenital. At a later period improper attitudes are common, and may even be the result of instruction, such as that of turning out the feet, a posture that interferes with effective leverage and induces an awkward, jarring walk.

The foot may be unbalanced by paralysis of certain muscles, and flat-foot may be one of the resulting deformities; but, as in such cases the cause is obvious and the prognosis and treatment are quite different, the subject does not properly come within the scope of this paper. In certain exceptional instances, however, the foot may be weakened by muscular inequalities whose cause is more obscure; but, as a rule, such cases yield very readily to proper treatment.

In estimating the relative ability of a foot from the mechanical standpoint, it will be evident that valgus must be a source of weakness because the weight of the body is improperly distributed on the foot, that abduction is a source of weakness because the strain of the calf muscles tends to bend the foot laterally, and that a low arch may be a source of weakness because the lax ligaments do not hold the joints properly. These three elements combined in varying degree make up the typical flat-foot deformity, but they are by no means always combined. Valgus may accompany an exaggerated arch, and valgus with abduction is the condition often found in the so-called chronic sprain of the ankle.

Restriction of motion and improper attitudes, whether voluntary, the result of habit, or involuntary because of pain or weakness or permanent change in any of the structures that make up the foot, are sources of weakness because they prevent the proper alternation of attitudes. All the elements of weakness may be found in developed flat-foot, and they must be overcome before it can be cured. Any of the elements of weakness may cause symptoms of disability and ultimately lead to deformity.

It must be very evident that the foot may be abused and deformed, and yet be able to perform its work; the predisposing causes of weakness are present, yet because little is required of the mechanism it is still efficient. It needs, however, but temporary weakness or slight injury or overwork to give the impulse, and the foot breaks down. Thus symptoms of the weak or flat foot may develop at any age, in the robust as well as in the anæmic individual, and it is thus explained why the very evident weak and flat foot of childhood often causes no symptoms until the period of rapid growth and increased weight of adolescence, or later when the life occupation is begun.

The term "flat-foot," as it is generally understood, is inadequate and misleading, in that it directs attention to a minor element of weakness and a secondary element of the deformity; for the symptoms of flat-foot do not result because the foot is flat, but because it is becoming flat; they are the symptoms of the strain upon the weak foot and of the injuries and changes accompanying a progressive dislocation. The mere depth of the arch, which varies in different races and individuals, is of small importance. An unarched foot is not graceful in outline, and it is not usually powerful as a lever, but if it is an inherited peculiarity, or if the arch has never developed, or if the acquired deformity even is no longer progressive, the individual does not as a rule suffer discomfort; while the normal foot, beginning to give way in abduction and valgus, may cause disabling pain before the imprint of the sole shows the slightest flattening of the arch.

The term "weak foot" has been adopted because it implies loss of function rather than deformity, for, although the so-called flat-foot is always a weak foot, yet a weak foot is by no means necessarily a flat-foot. The term is here used in its broader sense, to include not only the deformed foot, but the various elements of weakness and deformity which may cause symptoms similar to, and ultimately lead to, flat-foot, of which the symptoms and the deformity may be regarded as the result of a disproportion between the work to be performed and the ability of the supporting structures.

This theory of disproportionate work, which includes such a variety of predisposing and exciting causes that may weaken the mechanism on the one side or overburden it on the other, has been explained at length because of the conflicting and confusing hypotheses to be found in text-books and elsewhere, in which the effects of deformity have been mistaken for the causes, or in which a contributing or exciting factor in a special class of cases has been alleged as the primary and important element of all cases; and because the treatment to be described is conducted on the principle that the foot is a human machine that may be protected in the exercise of its functions by a knowledge of its mechanism.

If it is weak or disabled, the cause of the weakness, whether it lies primarily in the muscles or in the other component parts, may be made clear by comparing the disabled member with the normal standard. Once the cause is discovered and the obstructions to normal use are removed the weak foot may be protected in its weakness and become a strong foot, although the conditions still exist under which it originally broke down.

The symptoms of the weak foot, though similar in type, vary in severity according to the local condition and disturbance of function, the work to be performed, and the susceptibility of the patient.

The earliest symptom is usually a sensation of weakness; the patient begins to recognize as familiar a feeling of discomfort, of tire and strain about the inner side of the foot and ankle; sometimes, after long standing, a dull ache in the calf of the leg, or after overexertion a momentary sharp pain radiating from the point of weakness; thus the patient often dates the history of his trouble from a long walk. After a time the patient may become aware that he is accommodating his habits to his feet; he rides when he once walked, he sits when he once stood, he no longer runs up or down stairs or jumps off the street car. His feet have lost their spring, as he expresses it, which means that the foot is no longer supported and controlled by muscular activity and is no longer used as a lever. Not infrequently early symptoms are pain and tenderness at the centre of the heel, explained in part by the jarring heel walk which is always assumed when the foot is weak, and in part by the strain upon the attachments of the deep plantar ligaments. The patient may complain that he can not buy comfortable shoes; the reason is, that the weak foot under use is changed in shape, so that the shoe which was comfortable in the morning compresses the foot painfully at night; thus increasing discomfort from corns, bunions, painful great toe joints, and deformities of the toes is experienced. Coldness and numbness and increased perspiration, caused by the impaired circulation and weakness, are common symptoms in this class of cases.

Actual pain is, as a rule, felt only when the foot is in use; it ceases under temporary rest or relief from disproportionate work, and it is this remittence of symptoms, together with the fact that the discomfort is often more marked in damp weather, that leads to the mistaken diagnosis of rheumatism. The foot remains, however, weak and vulnerable; the patient recognizes the fact that he has what he speaks of as a weak ankle, or sprain, or gout, or rheumatism, but, as he has accommodated himself to the weakness, but little discomfort is experienced.

In many instances such relief or accommodation is impossible, and it is therefore among the working class that one oftener sees the frank and rapid development of the disability and deformity. The range of motion becomes more and more restricted; the habitual attitude, at first exaggerated to deformity only under the influence of the weight of the body, remains as a permanent displacement of the bones. The weak and dislocated foot is subjected to constant injury, to what may be likened to a succession of slight sprains, so that local congestion and tenderness appear, and consequent muscular spasm and rigidity.

Because of this rigidity of the foot, which has lost the power to accommodate itself to inequalities of the surface, the patient dreads to cross a rough pavement, for every misstep is a source of pain. Another symptom which is usually present in slight degree at every stage now becomes more prominent, the discomfort felt in changing from a position of rest to activity. The patient, after sitting or on rising in the morning, is unable to walk, but staggers and limps for several minutes, a symptom explained by the fact that when the foot is at rest there is a partial reposition of the displaced bones, which must again be forced into the deformed posture that has become habitual.

The local tenderness and muscular spasm are increased by use, so that the patient may have difficulty in removing the shoes at night, and the symptoms relieved by the rest of Sunday become progressively worse during the week; the pain and discomfort are more general in character, and are often referred to the dorsum of the foot, representing muscular rigidity and tension, and to the outer side of the ankle, where the external malleolus is grinding out a facet in the projecting os calcis. The patient may now complain of discomfort in the feet and cramps in the legs, even when in bed, and the appearance of weakness, awkwardness, and depression of spirits may be so noticeable that the case is sometimes mistaken for one of incurable nervous disease.

One can hardly exaggerate the pitiable condition to which the sufferer from painful flat-foot may be reduced. There is something peculiarly exasperating and depressing in an affection which prevents a person otherwise in perfect health from earning his living, and the duration of the symptoms, the mistakes in diagnosis, the ineffectiveness of treatment, and the apparent hopelessness of relief, combined, have a very evident effect upon the mental and moral as well as the physical condition of the patient. It is in this class that a definite promise of relief and probability of cure in a definite time is the best and most necessary of tonics.

If these facts are taken into consideration, that the inherited flat-foot, or that acquired in early life, or the complete flat-foot of long duration, or the weak foot to which the individual has accommodated himself, may cause no actual discomfort or pain—in other words, that there is no definite relation between the degree of deformity and the severity of the symptoms—one of the most important stumbling-blocks in the way of a proper apprehension of the true nature of the disability and its effective treatment will have been removed.

One must also rid one's mind of the notion that the weak and flat foot is a necessary sign of degeneration, to be found only among the weak-fibred and ill-nourished. The predisposition to deformity and the weak foot in its slighter grades are perhaps as common in the well born and well fed as among the traditional "mill girls." The development of the deformity, the exchange of discomfort for disability, the inherited or acquired predisposition existing, will naturally be more frequent, more rapid, and more marked among those who are obliged to use the feet constantly than among those who are not.

In all cases of weakness of the foot a thorough and orderly examination should be made of its functional ability and use, not only for the purpose of diagnosis, but in order that the amount and character of the temporary or permanent changes in structure may be estimated. One begins the examination by noting the manner of standing and walking. The heel walk, the exaggerated eversion of the feet, the slouchy gait, in which the leg is never completely extended, in which the power of the calf muscles is not applied, and in which the essential postures of the foot are disused, are all elements of weakness, and should be corrected whether they cause symptoms or not. The distribution of the weight of the body and the habitual use of the foot are often made evident by examining the worn shoe. If it is bulged inward at the arch or worn away on the inner side of the sole it shows weakness.

The same observations are then made on the bare feet, particular attention being paid to the line of strain or leverage: thus, a line drawn down the crest of the tibia from the centre of the patella, continued over the foot, should meet the interval between the second and third toes; if it falls over or inside the great toe, it shows that the foot is working at a disadvantage. The contour of the foot should then be examined; its internal border should curve slightly outward, so that if the feet are placed side by side, with the toes and heels in apposition, a slight interval remains between them; if this slight concavity is replaced by a noticeable convexity when weight is borne, the foot is weak. This change in contour is often the earliest and sometimes the only evidence of deformity. The arch of the foot, properly protected by the muscles and by a proper attitude, sinks but slightly under weight; there is a slight elasticity only, and if the depression is marked it shows laxity of ligaments and weakness. The exact amount of bearing surface may be demonstrated by an imprint of the sole in a manner to be presently described.

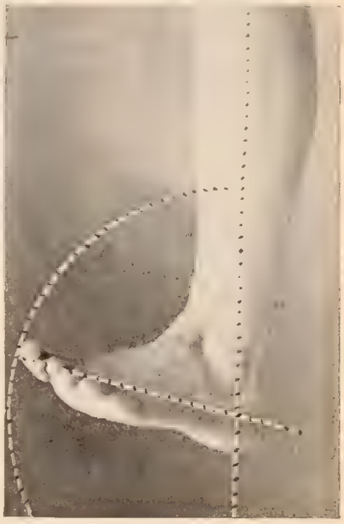
FIG. 8.—Voluntary dorsal flexion.

The balance of the foot as shown by the range of motion is next to be tested, for its limitation is one of the earliest signs of improper attitudes and weakness. This range of motion varies somewhat within normal limits; it is usually greater in childhood than in adult life, greater in the slender than in the massive foot, and greater in the foot used properly than in one that is not. The first test is applied to simple dorsal and plantar flexion; the leg must be fully extended at the knee; the line of strain must be in its normal relation, so that the foot may be neither adducted nor abducted, and the observation must be made on its outer border. In this position the patient should be able to flex the foot well beyond a right angle, from ten to twenty degrees. Voluntary extension can be made to about one hundred and thirty or one hundred and forty degrees, the range of motion being from fifty to sixty degrees.

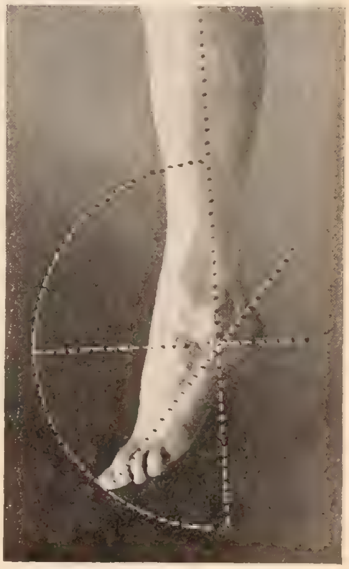
FIG. 9. Voluntary plantar flexion.

By far the most important test is that of the power of adduction or inversion of the foot, the test of the medio-tarsal and subastragaloid joints, because in this motion the os calcis is drawn forward and inward under the astragalus, while the fore foot is flexed about its head. With the leg extended and the patella pointing forward, the foot is turned in as far as possible; the elevation of its inner border, or supination, and the turning in of the heel are well illustrated in the photograph (Fig. 10); the actual adduction is somewhat difficult to measure, but it is about thirty degrees. Even the mild and early cases of weak foot usually show some limitation of this most important motion, and in many instances it is completely lost, the patient turning the entire leg in the effort to adduct the foot. The less important motion of abduction is also shown (Fig. 11). Its range is somewhat less than that of adduction.[*] The range of passive motion is then tested by pushing the foot in all directions. The range of dorsal flexion is from five to ten degrees beyond that of voluntary motion, while passive extension, so far as it applies to the ankle joint, is about the same as the voluntary, although the fore foot may be still farther bent downward at the medio-tarsal joint. The limit of passive adduction is considerably beyond that of voluntary inversion.

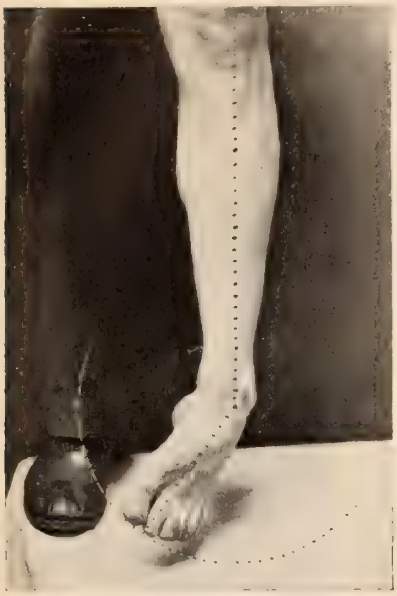
FIG. 10.—Voluntary adduction.

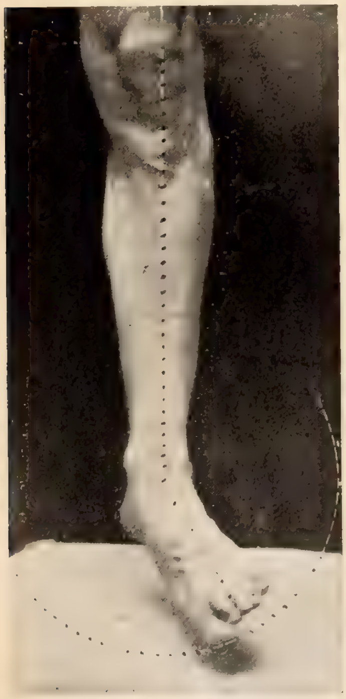
FIG. 11.—Voluntary abduction.

Passive motion serves several purposes; contrasted with the range of voluntary motion, it shows the habitual use of the foot, since the motion least used is most limited; it brings out the slight restrictions of motion and the presence of local tenderness, which, even in early cases, are usually present. Thus, if pressure is made just in front of and below the internal malleolus, at the astragalo-scaphoid junction, and at the same time the foot is quickly inverted, the patient will notice the painful pressure point and a feeling of constriction and tension about the dorsum of the foot before the normal limit of motion is reached. As the foot is dorsally flexed the plantar fascia is put upon the stretch, and its condition may be noted, for a contracted and sensitive plantar fascia may cause symptoms of disability that induce or are combined with abduction and valgus.

In other words, this mode of examination makes evident the amount of disability and permanent change in the machine which must be overcome before a cure can be accomplished. By it one will recognize several grades of weak foot:

1. The normal foot improperly used, as shown by the method of standing and walking.

2. The foot in which the range of voluntary motion is restricted, showing disuse of function, and in which the elements of deformity are apparent when weight is borne.

3. That in which the passive range of motion is restricted, or in which there are evident weakness and deformity. This limitation of motion depends, as a rule, on the accommodative changes in structure to the habitual postures or to the deformity. These changes are first evident in the muscles and ligaments and finally in the articular surfaces of the bones. Added to this underlying limitation of motion there is always a varying degree of muscular spasm, dependent upon the local irritation and injury.

There can be no doubt that the origin of the weak foot may in many instances be traced to early childhood. Certainly deformities and improper attitudes are very common at this period, and it is much more likely that they are ingrown than outgrown. Actual pain from the weak foot is rare at this age. The child may complain of fatigue and may be weak and awkward, but it is usually because of the very evident deformity rather than because of symptoms that advice is asked. In these cases, as in every case, the habitual attitudes and use of the feet are of the first importance.

One of the most frequent of the improper postures is that of exaggerated eversion of the feet, which is not only an ungraceful attitude, but a direct cause of weakness. The opposite attitude of inversion of the feet, the so-called "pigeon-toed" walk, is most offensive to relatives and friends, and it is for the correction of the attitude that the child may be brought for treatment. This attitude is in many instances a sign of the weak foot, for on examination the bulging on the inner side, the inversion of the leg in its relation to the foot, and the flattened arch, show very plainly that it is the foot and not the attitude that requires treatment, and that the attitude is in this class of cases really a safeguard against increasing deformity, which will correct itself when its cause is removed. Particular emphasis is laid upon this point, which is very generally overlooked, because the routine treatment of the pigeon toes in these cases might be the cause of direct harm.

"Weak ankle" is a term popularly applied to the weak foot of childhood, in which the shoe is worn away on its inner side. In these cases the foot is in a position of valgus when in use. Weak ankles are very common in very young children, and are often caused by defective assimilation. At this age the foot is, in addition, usually flat; but in the valgus or weak ankle of later years the arch is often normal in outline.

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[*] The attitude of adduction is the strong attitude, because the weak part of the foot is protected by the muscles. The typical strong deformity is the club foot, of which pain is not a symptom and in which the weight of the body may be made use of to correct and prevent deformity. The attitude of abduction is the weak attitude of muscular relaxation, in which the weak part of the foot is subjected to overstrain. The typical weak deformity is the flat-foot, in which the strain and weight of use cause pain and increase the deformity.

Prominent or "outgrown joints" often attract the mother's attention; the internal malleoli appear prominent because of the position of valgus, or because of the eversion of the feet the malleoli may strike against one another, "interfere," and thus there may be an actual hypertrophy from local irritation.

Another type is the long, slender foot of adolescence, in which the scaphoid is prominent because of the strain and pressure put upon it by the improper attitudes; its position is often shown by the point of wear in the leather of the shoe. In the weak foot of childhood, although marked restriction of voluntary and passive motion may be present, there are, as a rule, but little local tenderness and muscular spasm, and, as has been said, but little actual pain, thus differing greatly from the adult type.

(*To be concluded.*)

NOTES FROM
A COUNTRY SURGEON'S CASE-BOOK.

By V. BERRY, M. D.,
WAGONER, INDIAN TERRITORY.

It may be of interest to the profession of the States, especially the eastern ones, where specialists abound, to learn something of the work being done by members in this so-called "land of the savage and outlaw." Not that miracles are being performed at the bidding of an open-mouthed laity, but we think we are at least keeping our share of spokes in the wheel of progress in repair. It is true the "yarb doctor" and "blatant" educated quack infest the land at times. We also have the honest, plodding, country doctor of all degrees of attainment, and as well the fellow who "pulls through on cheek," and makes capital out of the superstitions and infirmities of humanity, who knows nothing of therapeutics, but writes from eight to ten prescriptions (?) for a simple cold—all mixtures of the different colors of the rainbow, of course, and composed of red water, "yaller" water, blue sugar, etc.—and who for his life could not tell you whether to spell cricket by beginning with a *c* or a *k*. With this man every case of simple urethritis is stricture, and "needs an operation." Every pelvic ache demands the immediate removal of the ovaries. These are the fellows that are living in hopes a bounty will some day be offered for all ovaries that have been taken from the human form divine.

Case I.—On the second day of November, 1892, I was summoned to see Mr. E., a young man about thirty years of age, and a tie hauler by occupation. The messenger said the patient had "a lump in his groin, caused by lifting a heavy railroad tie the preceding day," eighteen hours previous. Also said "great pain and vomiting had been present for twelve hours." Of course, strangulated hernia was easily diagnosticated, and, putting my instruments together and calling Mr. Cobb, our druggist, to my aid, we were soon in the presence of our patient. It is hardly necessary to say our diagnosis was correct. It was a left oblique inguinal hernia, then strangulated about twenty hours. After gentle taxis for some minutes, I gave up all attempts at reduction, as the patient was suffering intensely and clamoring for relief from any source. I then anæsthetized with chloroform, and turned the anæsthetic over to Mr. Cobb. I now laid the tumor open in its long axis, and after carefully working my way to the gut, which was almost black in color, freed adhesions and returned the viscus to the abdominal cavity, dissecting out the sac as best I could, put two or three sutures in the upper angle of the wound, and packed with gauze. The surroundings of this patient were as septic as could well be imagined. After properly dressing with gauze, cotton, bandages, etc., I left him fairly comfortable. In about a week a messenger informed me that my patient was "about to decay." He said that the "flies had blown him." On my arrival I found a large amount of greenish-yellow and very fœtid pus flowing from the wound. I removed the stitches, douched out thoroughly, repacked, and left instructions to keep clean and dress daily. I saw the patient no more till the wound was healed. A good recovery resulted, and at my last observation, several months later, the results were satisfactory, as no signs of a return of the trouble were visible.

Case II.—On the first day of December, 1892, I was called to see Mrs. K., who had sustained a complete laceration of the perinæum at confinement a year previous. The usual symptoms of involuntary passages of flatus, fæces, etc., were present; in fact, her condition was humiliating and deplorable in the extreme. The rectum was split up its anterior wall to the extent of two centimetres and a half (one inch), and the columnæ Morgagnii were obliterated, with the exception of a space about one centimetre and a half broad on the posterior wall. A few excoriations existed on the everted margins of the gut. Considerable vaginal eversion existed, with a consequent uterine displacement. With the assistance of my friends, Dr. J. O. Callahan and Dr. A. E. Bonnell, repair was effected by the operation usually known as Tait's method; though, according to Hart and Barbour's excellent *Manual of Gynæcology*, this title is erroneous, as the operation was evolved in the following manner: John Duncan in 1872 closed

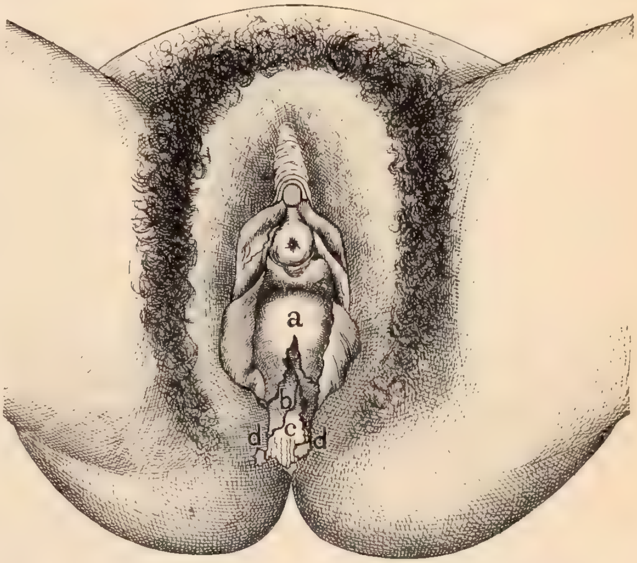

Fig. 1.—*a*, posterior vaginal wall; *b*, anterior rectal wall; *c*, posterior rectal wall; *d d*, torn sphincters.

an artificial anus by dissecting up the mucous membrane around the orifice and uniting the flaps thus made—tissue not lost as in simply freshening the edges—and then passing deep sutures and bringing the muscular walls together, thereby securing muscular union with natural mucous lining. Collis, of Dublin, 1861, split the edges, instead of paring them, in a case of vesico-vaginal fistula. A. R. Simpson applied Duncan's method of dissecting up the mucous membrane to an operation for repair of the perinæum involving the anus, splitting the anal and vaginal mucous membranes and uniting the raw edges, and then bringing together the muscular structures. Lawson Tait's improvement consists in using angled scissors, and passing the sutures *inside* the integument instead of through it.* The accompanying cuts (Figs. 2 and 3), which are closely modeled from drawings in the work given in the reference, give a good idea of the operation. Fig. 1 is an original drawing of the condition before operation. After the necessary preparation of the patient, such as scrubbing and shaving the pudenda, with ethereal soap as the cleansing agent, thoroughly douching and scrubbing the vagina and pudenda with bichloride solution, we proceeded to operate as follows: The patient was placed in the dorsal position with knees well drawn up, and an incision was made from *a* to *b*, as shown in Fig. 2, with scissors. Next an incision was made from *c* to *d*, between the vaginal and rectal walls; then from *e* to *f*. Now, having four flaps laid out, we dissect up as follows: For the lower flaps, catch at 2 2 (Fig. 2) with tenaculum, and dissect with scissors, making the flaps as shown in Fig. 3. Catch the upper flaps at 1 1 (Fig. 2), and dissect up in the same manner. The apex of the dissections should extend at least half a centimetre above the split in the vagina, or a small fistula may result, even though good union took place. We now stitch each flap to its fellow of the opposite side, using fine silk or silkworm gut, tying the knots on the mucous surfaces, with long ends projecting to facilitate removal. Now pass deep silkworm-gut sutures, entering the eye-pointed needle just inside the integument, passing to the wound apex, thread and pull through; then pass in the same manner on the opposite side, and thread with the proximal end of the suture and complete the passage. In this case three of these sutures, re-enforced with two silk sutures which included the integument, were sufficient. We now dust with boric acid, pad with gauze, bandage, tie the knees together, and leave instructions with the nurse to allow nothing but a liquid diet, and to move the bowels by enema till the sutures have been removed. Also interdict intercourse for two months. The results were all that could be desired, the bowels moving naturally and under perfect control, and the husband pronouncing his combats with Venus successful in every respect.

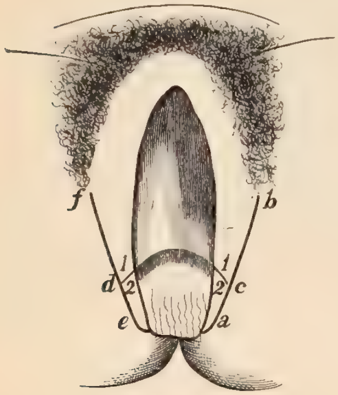

Fig. 2.

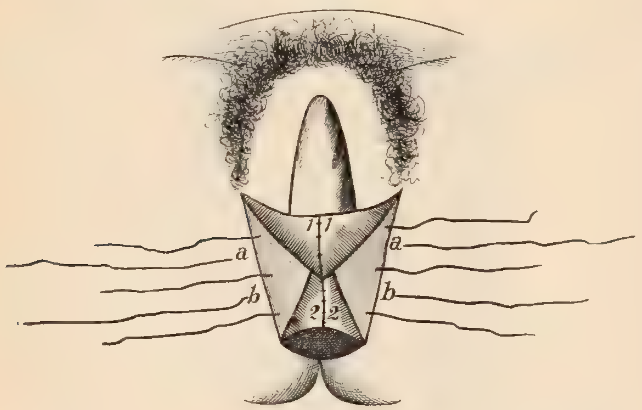

Fig. 3.

Case III.—On May 22d of this year, Mrs. G. called at my office for advice and treatment, giving the following history: Twenty-five years of age; married; mother of two children, the youngest being three years old; she had had two miscarriages since the birth of the youngest; cessation of menstruation about three months and a half preceding this consultation, and a "profuse show" about one month preceding this date. By this history we have an apparent menstruation occurring once in four months and a half. None of the usual symptoms of pregnancy existed except absence of *regular* menstruation, although she believed herself pregnant. She was in fairly good flesh, but complained of feeling ill most of the time. Suffered especially from headache and dizziness. I made a thorough examination and found an enlarged uterus somewhat anteverted—by this I do not mean physiological anteversion—and with the speculum I found a small erosion, but otherwise the tissues looked healthy. There was no discharge from the os, though this may have been masked by the use of a vaginal douche preceding examination. I diagnosticated a recent (month previous) miscarriage, with consequent subinvolution. Advised rest, douches, tonics, and "expectancy." On the evening of the 26th, four days later, I was summoned in great haste, the messenger saying my patient was thought to be dying. On arriving at the bedside I found her just passing from a septic chill. I advised early curettement. As the hour was late, the family asked to postpone operation till morning, which we did. Morning found our patient in so much better condition that further postponement was asked and granted, after due warning of possible consequences. About 1 P. M. she suffered from one of the severest septic rigors I have ever seen, though her temperature at no time ran above 103·8°. I dispatched a messenger for an assistant to administer an anæsthetic. The messenger summoned two instead of one, one of them being a true type of the "yaller" water and blue sugar gentleman. I wish to give a very small amount of the conversation which took place between myself and this gentleman (?), just for the benefit of any of my readers who may never have enjoyed meeting one of these fellows in a so-called consultation. We will call him Dr. X. Of course, he always has a cigar in his mouth and wears gold-rimmed glasses on the street. On arriving, he drove up with a rush, walked in with a grandiloquent air, and immediately gave *orders* that the gentleman accompanying him examine the patient, not even granting the courtesy of a single question to myself. Dr. Y. meekly obeyed the order. After Dr. Y. was through, Dr. X., with a very owl-like countenance, proceeded to examine and ask innumerable questions, a majority of which were entirely foreign to the case. Finally, with a countenance suffused with an expression similar to the face of Columbus when he discovered America, so I imagine, he announced: "Why, Mrs. G., you have spinal meningeetus! Just look here, Dr. Y.!"—pointing to her spine—"just look at that!" He was pointing to pressure marks over the spine, made by the patient lying on her back. After giving various directions as to "blistering the spine, absolute quiet," etc., I said: "Doctor, don't you think we had better consult over this matter before going further?" He said yes, and, on retiring, said: "Doctor, you have a case of spinal meningeetus, following after this hur old *la grippe*. I've had lots uv cases uv it lately, and I tell you they are hard ones to pull through." I said: "Doctor, where are your symptoms of spinal trouble? I do not see a single one. Of course, this woman has a tired back, and suffers from the reflex backache that usually accompanies pelvic disease in the female, yet there is not a single symptom of spinal disease. The temperature is now almost normal, while it was only 103·8° just after the chill." Dr. X.: "Well, I think the case is very plain, don't you, Dr. Y.?" Dr. Y. meekly said yes. I proposed to await developments, and the proposition being accepted, for which I was truly thankful, as the old quotation had naturally come into my mind, *latet anguis in herba.* Dr. X. and Dr. Y. got into their buggy and drove off, after telling the husband very impressively they "thought Mrs. G. would *probably* recover *if* she had proper treatment." I told him I thought so too, and also told him he had now better send for a *physician.* He did so, Dr. Blakemore, of Muskogee, being summoned, and, to make a long story short, we removed a partially decomposed placenta and curetted the putrid membranes from the uterus, douched with bichloride solution, and packed with iodoform gauze. The patient made a rapid and complete recovery.

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* See Hart and Barbour's *Manual of Gynæcology*, edition, 1890.

This case represents one of our little pleasantries (?) which contribute to the spice of life in this country, yet it is consoling to think that they are of rare occurrence. I often wonder if there is a place where physicians treat one another as brothers, where, when one calls another to his aid, that assistance is proffered which comes from the heart of true manhood; that assistance which the unselfish and generous-hearted gentleman delights in giving; where the sneaking, cowardly hypocrite is not known. If there is such a place, it must be a physician's paradise. It is not in the Indian Territory. I do not say we have no good men; far from it, for we have some who are as true as steel itself.

EPILEPSIA DIABETICA (ACETONICA).*

By GEORGE W. JACOBY, M. D.

That an intimate connection exists between certain general diseases and affections of the nervous system is now universally acknowledged.

In no disease is this connection more clearly shown, both clinically and pathologically, than in diabetes, for in this affection we plainly see how a general nutritional disorder may produce manifold pathological changes in the nervous system of the individual. The remote influences of diabetes in the production of nervous disorders—as, for instance, the influence which diabetes in an ascendant may have upon the development of hysteria, epilepsy, and mental disorder in the descendant—are, of course, not referred to here, and my remarks apply solely to the frequent nervous complications which are met with in cases of diabetes of various intensity and duration. Since a number of years the observation, classification, and interpretation of many phenomena which formerly were either carelessly observed or entirely overlooked has so markedly enlarged our knowledge of the clinical history of diabetes that at present the symptomatology of this disease is very minute and comprehensive. While this is as true of the nervous disorders complicating the disease as it is of all the other symptoms, the advance of our knowledge regarding these disorders had until the last few years been retarded by methods of study which can hardly be called mistaken, but must be considered one-sided.

From the time that experimental physiology demonstrated that a variety of lesions of the cerebro-spinal axis were capable of producing diabetes, or, to be more precise, glycosuria, all cases of nervous disorder occurring in connection with this condition were studied in the light of these experiments, and the diabetes was looked upon as a secondary symptom of some primary nervous disorder—a disorder at some point or other of the central nervous system capable of producing a pathological assimilative change.

Thus it happened that the other side of the question—that the various nervous disorders met with in diabetes might be consecutive to and a direct result of the diabetes—was for a long period of time entirely overlooked.

Since this aspect of the question has received our attention our knowledge of diabetic nervous disorders has been widely extended, and the psychical affections, the neuroses of various kinds, the apoplectic attacks due not only to hæmorrhages or embolism but also to nutritional disorders of the brain, and the various peripheral paralyses occurring in this disease, have been so carefully studied that little remains to be said concerning them; motor complications of a spastic nature, on the other hand, have either not received the attention which they merit or their occurrence is extremely infrequent. I refer here to convulsive phenomena of an epileptic nature taking the form of attacks of *grand* or *petit mal* and unaccompanied by any paralysis.

Convulsions occurring in diabetics are either partial or general; if the former, they are usually the precursors of a paresis or a paralysis, and as such are symptomatic of organic brain disease; if they are general and unaccompanied by any focal symptom, the relationship in which they stand to the diabetes is not so easily defined, for in such cases, as it is difficult to decide whether the diabetes had existed prior to the onset of the epileptic spasms, so it will be difficult to say whether the convulsions are dependent upon the diabetes or whether the reverse—glycosuria secondary to convulsive seizures—is the case. Under these circumstances each such case must be studied by itself, always bearing in mind the fact that the transitory occurrence of sugar in the urine of ordinary epileptics after a convulsive attack is so rare as to be exceptional. Neither must we forget that diabetes is frequently associated with renal disease, in which case a uræmic attack might be mistaken for an epileptic one, between which two there is, after all, only an ætiological difference.

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* Read before the German Medical Society of the City of New York, October 7, 1895.

A search through the literature of the subject has convinced me that only very few such cases of epilepsy due to an antecedent diabetes have been published, and that when this complication has been mentioned at all it has only received scant reference; thus, in a general way, this association is referred to by Griesinger, Bernard and Féré, and Grellety.

Finlayson, in the report of a case, says: "Death from coma is a well-known mode of termination in diabetes, but convulsions are, on the contrary, very rare. Doubtless, in most text-books it is stated that convulsions may occur, but the statements are of the most general character, and indeed it was difficult to find any reference to such cases."

Cyr adduces this fact as a diagnostic point of value in the recognition of diabetic coma, for, in a collection of thirty-two cases of sudden or rapid death occurring in diabetes which he has made, it is specially mentioned that in none of them was the coma accompanied by convulsions. Perhaps the best idea of the rarity of the occurrence of convulsions in diabetes may be gained by noting the facts adduced by Dreschfeld, who states that in sixteen cases of diabetes ending in coma observed by him convulsions occurred but once, and in eighty cases which he had been able to trace, convulsions were noted only in six.

In this connection I am able to report three cases which, although to a certain extent incomplete, can not fail to be of interest. These are cases of pure diabetic epilepsy, one of which showed attacks of both *grand* and *petit mal*.

CASE I (personal observation) is that of a young girl, T. K., twenty-two years of age, whom I saw first in November, 1888. She at that time complained of pain along the course of both sciatic nerves, and presented symptoms of bilateral neuritis. Examination of the urine gave reaction to sugar; no albumin.

February 1, 1889.—Patient is growing very thin; feels tired; is always hungry and thirsty. Sugar, 0·25 per cent. by the fermentation test. Placed upon treatment. On November 20, 1889, about a year after the patient's first visit to my office, I was requested to see her, as she was said to have had convulsions for twenty-four hours. At this time I obtained the following history: The father died of diabetes; no history of nervous disease in the family. Patient never had any convulsions as a child. Her sister says that since several weeks patient has complained of severe pains in the legs, also pains in the arms and breasts; that she has had attacks of vomiting preceded by nausea and almost incessant diarrhœa. Since two days she has been dizzy and walked as though she were intoxicated. Yesterday she vomited repeatedly in the morning and remained in bed. In the afternoon she had a convulsive attack, with loss of consciousness. After an hour another convulsion supervened, and from then on these convulsive attacks recurred frequently, so that she probably had a dozen in twenty-four hours. The attack which I witnessed consisted of tonic-clonic convulsions, implicating the entire muscular system, beginning in both arms and accompanied by unconsciousness. The urine showed about two per cent. of sugar; no albumin. Knowing of von Jaksch's writings on acetonuria, and particularly remembering his case of acetonic epilepsy, I examined the urine for acetone. To von Jaksch's case, and to the method which I made use of in examining for acetone, I shall again refer. The urine, as shown by the color which it assumed when tested, contained large quantities of acetone.

November 21st.—Since yesterday the patient has had five convulsive seizures. Acetone the same.

22d.—One attack during the night. Acetone the same.

23d.—One attack. Urine not examined.

December 2d.—No attack since last note. Acetone in small quantities.

December 9th.—No attack. No acetone reaction, two per cent. of sugar. Patient, who lives out of town, is instructed to send urine if she has any further attack.

December 19th.—Had several attacks during the night. Urine to-day contains acetone in large quantities.

January 3, 1890.—Urine free from acetone.

This patient I never saw again, but from the sister I obtained the history of repeated attacks, recurring at intervals of several weeks and terminating in July, 1890, in an unconscious state, in which she remained for several days and finally died. During this period there were no convulsions.

CASE II (personal).—L. F., aged seventeen years; seen first on February 3, 1892. Patient was referred to me on account of convulsive attacks and a peculiar affection of the skin which was supposed to be neurotic in character. The history which I obtained was as follows: Patient was perfectly well until three years ago. He has had no diseases of children, and there is nothing in his family history which is worthy of comment. In May, 1889, his mother noticed that the boy was looking poorly and that he was losing flesh, but she paid no particular attention to this. One morning, while he was polishing his shoes, and at the same time carrying on an animated conversation, laughing and joking, he suddenly gave a scream, then fell to the floor, and was unconscious. At first his entire body became rigid, and then "his hands and feet began to work; he did not foam at the mouth." After the attack, which lasted only a few minutes, he felt very tired and slept for several hours. Three or four weeks later he had another similar attack. During the interval he was apparently well. In all he has had from ten to twelve attacks, during some of which he has severely bitten his tongue. All the attacks have occurred in the morning, except one, which came on in the afternoon. In August, 1890, his mother noticed that, in addition to an increased emaciation, he suffered from continuous thirst and that he passed large quantities of urine. The family physician was now consulted, and he said the boy was suffering from diabetes.

Under a strict antidiabetic diet and other treatment (bromides) there was marked improvement. During the summer of 1891 the patient lost nearly all of his finger nails; suppuration occurred around the matrix and they fell off. Since about three months he complains of numbness of the tips of the fingers and of a peculiar eruption on the extremities. An examination revealed marked emaciation, certain sensory disturbances, tenderness over certain nerve trunks, and a curious eruption upon his body. There is no necessity for describing these neurotic symptoms, nor the dermatological affection, as neither one nor the other has any bearing upon the question under consideration. I will merely state that the skin trouble was diagnosticated by a prominent dermatologist, who saw the case with me, as a xanthoma diabeticorum. This feature of the case has been considered elsewhere by the gentleman referred to. Repeated examinations of the urine showed three per cent. of sugar and the presence of small quantities of acetone.

February 16, 1892.—Patient complains of feeling poorly; is always cold, and has momentary attacks of forgetfulness.

From the description of these, they are attacks of *petit mal.* No convulsive movements.

26th.—Patient was presented before a society of medical men, nervous and excited.

27th.—Has had several attacks of dizziness with momentary unconsciousness.

Urine contains sugar, three per cent. Acetone in small quantities.

As the patient disappeared from observation, I am unable to give his further history.

Case III (personal).—In addition to these cases I have among my notes brief references to a case which, although seen only once, is worthy of reference here. It is that of a male, aged thirty-four years, who claimed to have been perfectly healthy until six months prior to his calling upon me. He then had a convulsive attack which I have designated as epileptic. After a few days he had another attack, and in all he has had about twenty. An examination gave no objective symptoms. Patient also complained of thirst and loss of flesh, and upon examining his urine I found this to contain one per cent. of sugar.

Cases which have been reported by others are the following:

Lecorché refers to the case of a woman, eighty years of age, who passed a hundred grammes of sugar and about two thousand grammes of urine daily. Under alkaline treatment, after a year, the urine showed only a trace of sugar, but she was attacked by tonic convulsions of the arms and legs. They came in attacks of about fifteen to twenty daily, each attack lasting about half a minute to a minute. Intelligence not affected. After several days of alkaline treatment these symptoms passed away.

This case is mentioned as belonging to the class of spastic motor disturbances, but it is not at all clear that the case was epileptoid in nature.

Finlayson reports a case of diabetes in which convulsions occurred, lasted seventeen hours, and terminated in death.

A case reported by Lasègue must, I think, also be considered epileptoid in character. It is that of a man fifty years of age, of good habits, and leading a very active existence. Four years prior to coming under observation, while enjoying perfect health, he was attacked by an intermittent diarrhœa which after various futile attempts was ultimately cured. Some time thereafter an attack of gastralgia, supposed to be due to a dilatation of the stomach, supervened. Finally, eighteen months prior to Lasègue's report, without any prodromal symptom and without assignable cause, he fell down unconscious. The following day no trace of this accident remained. Since then two or three times he has been attacked in a similar manner. Another fainting attack which lasted about twenty minutes occurred subsequently, also passing off without leaving any objective symptom. Examination of the urine revealed the existence of diabetes.

It is possible that in my search through the literature of the subject some cases may have escaped my attention, but nevertheless it seems strange that these few cases here noted should be the only cases of diabetic convulsions which I have been able to find. That in these cases, and more particularly in those which came under my direct personal observation, the convulsions stood in direct relationship to the existing diabetes, can, I think, not be questioned, and their pathogeny is also, as it appears to me, perfectly clear. Such cases as I have here designated diabetic epilepsy should be classed under the narrower heading of "acetonic epilepsy," as thus an idea of their pathogeny would be simultaneously conveyed. If we cursorily review the histories of these cases we are at once impressed by the analogy which they bear to the symptoms observed in other intoxications, such as alcoholism, saturnism, and uræmia; if, furthermore, we consider the frequency with which in diabetes we meet with motor, sensory, and psychic disorders, it is hardly possible to avoid the conclusion that many, if not all, of these complications are due to the action of a toxic process; there is no reason to exempt the convulsive seizures from this deduction, and everything points to the conclusion that the active toxic agent in the production of diabetic convulsions is acetone in excess.

This statement is well supported by the publications of von Jaksch, who already ten years ago described several cases in which, after errors in diet, comatose conditions supervened, often accompanied by headache and tonic and clonic spasms of single muscular groups; in two cases pronounced epileptoid attacks were observed with the subsequent discovery of large quantities of acetone in the urine and an absence of any other ætiological factor.

One of these cases is of unusual interest. It is that of a male patient, twenty-four years of age, who, being in perfect health, after an error in diet is suddenly attacked with convulsions, which were preceded by severe retching and vomiting. These convulsions recurred at more or less brief intervals for a period of seven days, gradually increased in intensity, and then during several days diminished in frequency until they finally disappeared. The attacks were accompanied by unconsciousness, and consisted of tonic-clonic convulsions, the eyes being turned upward and their termination being associated with severe dyspnœa.

Von Jaksch, reasoning as every one who considers epilepsy a symptomatic affection and therefore essays to avoid as much as possible the term idiopathic as applied to this trouble must reason, endeavored to discover the cause of the convulsive outbursts in this patient. All other possible causes having been excluded, he examined the urine for acetone, and found it to be present in a large amount. The acetone diminished in quantity in direct proportion to the lessening frequency of the convulsive attacks, and with their cessation disappeared completely.

In order to establish, with a fair amount of certainty, the fact that the cases of diabetic epilepsy are actually cases of acetonic epilepsy (convulsions due to an auto-intoxication by acetone), it will be necessary to show that acetone may occur in large quantities in the blood or in the urine of diabetics, and that acetone can clinically and experimentally produce symptoms analogous to those observed in our cases.

The first point is so universally acknowledged that i will merely be necessary to recall to your mind that as far back as the fifties Petters discovered this substance in diabetic urine. Since that time it has become known that the peculiar chloroform like odor which people suffering from diabetes exhale is due to acetone; that if we allow such patients to breathe into water, the water will assume the same odor, and upon distillation a reaction of acetone may be obtained in the distillate; we furthermore know that in the urine of such patients there is frequently found a body which, upon the addition of perchloride of iron, assumes a deep red color. This body, which has proved to be aceto-acetic acid, is very unstable and easily splits up into carbonic acid and acetone, thus in the urine of diabetics giving the reaction to aceto acetic acid and acetone or to the latter alone; finally we also know that acetone is found in the urine of the majority of cases of diabetic coma. Clinically we have learned that those patients (diabetic or not) in whose urine acetone has been found in large quantities have shown either gastro-intestinal, respiratory, or nervous disorders, singly or in combination with each other. The nervous disorders occurring under such circumstances consist in excitation, somnolence, and coma, with, as is admitted by Lecorché, the occasional occurrence of convulsions.

From an experimental point of view the question must be answered whether tonic and clonic convulsions can be produced in animals by poisoning with acetone. This question has, by a number of observers, been answered negatively; if, however, the absorption of large quantities of acetone by the human organism will produce symptoms of poisoning, characterized by tonic and clonic convulsions, then these same symptoms should occur in animals into whose system proportionately large amounts of acetone have been introduced by exposure to its influence in a similar manner as the human organism has been so subject. Experimenting upon these lines, von Jaksch subjected animals to the *prolonged* action of acetone in the form of steam, with the result of throwing them into a state of tonic-clonic convulsions. That clonic muscular spasms may be produced by the *short* exposure of animals to the action of acetone is shown by the experiments of Metzler. Metzler's experiments, which were conducted upon dogs, consisted in the subcutaneous injection of this body. His fourth experiment demonstrates that acetone, even when an animal is rapidly brought under its influence, acts upon the entire nervous system, producing a variety of symptoms, together with clonic contractions of the muscles.

We thus see that neither experimentally nor clinically can any reasoning be applied which would invalidate the assumption that in our cases we were dealing with an acetonic epilepsy, unless we are willing to assume that the discovery of acetone in the urine of persons who have had a convulsion may be an effect and not a cause—that is to say, that the production and elimination of acetone is due to the convulsive seizure as such. This objection is also met by von Jaksch, who, with a view to answering the question whether acetone is not occasionally found in the urine of patients suffering from primary or secondary epilepsy, during the course of three years examined over sixty persons thus afflicted without in a single case finding notable quantities of acetone.

Three years ago, during a period of six months I examined a large number of specimens of the urine of epileptics, and in no case did I find even a trace. Engel also arrives at the conclusion that intense muscular movements, as convulsions, in themselves do not produce an increased acetonuria, a conclusion which was particularly well illustrated by a case of tetania gravidarum which he reports. On the other hand, it must not be overlooked that Baginsky found enormous quantities of acetone in the urine of children with eclamptic attacks.

It is very probable that the fact of my not finding even minimal quantities of acetone in the urines which I examined was due to my not making use of any of the distillation tests in my analyses; for we know that even in the urine of normal individuals we can by means of the distillation tests discover traces of acetone, but that these traces are not discoverable by other methods. The test which I made use of in my examinations is the one which for rapid clinical work is the most practical, inasmuch as it is the only one, so far as I know, which can be applied to the urine direct without first subjecting this to the process of distillation; it is known as Legal's test and can be recommended as perfectly reliable, as notable quantities of acetone are thereby unfailingly detected.*

In conclusion I would like to touch upon one more point, and that is: if acetonæmia is so frequently met with in diabetes and if such intoxication is capable of producing epileptic convulsions, why are these convulsions clinically of so rare occurrence? The reason, so far as I can see, is that the majority of cases of acetonæmic intoxication met with in diabetic patients are cases of acute poisoning, and that the usual termination of this acute acetonæmia is death in a few days from the first stage of excitation.

We are, however, aware that clinically acetonæmic poisoning may occur in a chronic, an intermittent, and an acute form. The chronic form presents the same symptoms as the acute form except that the symptoms persist for several weeks before a fatal result occurs. The intermittent form—and this is of comparatively rare occurrence—may present all the symptoms of either the acute or chronic forms, but differs from these inasmuch as these symptoms, together with the pathognomonic reaction and odor, disappear entirely, to remain absent for a more or less short period of time and then again to return. After a number of such recurrences a final crisis sets in which terminates in coma and death. To this class of intermittent poisoning belong all cases of recurrent diabetic convulsions.

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* This test, as recommended by von Jaksch, is carried out as follows: To the urine contained in a test tube some freshly prepared ferricyanide-of-sodium solution is added; thereupon we add a strong aqueous solution of soda (thirty per cent.) until an alkaline reaction is obtained; hereupon a dark-red or purple coloration ensues which in a short time pales off to yellow. If now two to three drops of concentrated acetic acid be added in such a manner that the acid does not mix with the entire specimen, at the line of junction of the acid with the contents of the test tube a crimson-red coloration will appear, if the urine contains small quantities of acetone; if large amounts are present, a dark purple-red color is produced; both of these shades upon standing give way to a brownish green.

We are thus, by this class of cases, again forced to the conclusion that the epileptic attack is an acute intoxication, that it is an expression of conditions of varied nature, that in the organism of epileptics a poison is generated or various toxines which normally exist there are increased in amount until an accumulation of this poison finally brings on the attack.

Whether we look upon the production of this poison as due to a combination of the various original factors of the products of putrefaction, or whether we consider it as a result of the breaking up of albuminoids and therefore a symptom of increased tissue waste, is immaterial and probably varies in various cases; but certain it is that the increased toxicity of urine subsequently to an epileptic paroxysm (Féré, Voisin, Régis), the similarity of many uræmic attacks to the epileptic one, together with our knowledge that the uræmic paroxysm is due to an auto intoxication by urea, and now the facts which I have here adduced concerning the production of convulsive attacks by acetonic intoxication, are all facts which tend to confine the diagnosis of idiopathic epilepsy to an ever-diminishing circle.

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SUPRAPUBIC CYSTOTOMY FOR HÆMORRHAGE INTO THE BLADDER.*

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Bloody urine is a frequent symptom of many diseases of the genito-urinary tract, but it is an unusual occurrence for blood to accumulate in any large amount in the bladder cavity proper. In looking over the literature of the subject I can find no case on record of any renal condition being responsible for the collection of blood in the bladder. In tumors of the kidney, in renal calculi, in tubercular kidney, the blood arising from these conditions is usually disseminated through the urine and easily escapes with that fluid in micturition. It is not in such large amounts as to favor coagulation, and even in such unusual instances as hæmophilia the blood clots are small and are passed without difficulty by the patient.

In the bladder, however, the conditions are more favorable, under proper circumstances, for the rapid escape of blood and for its collection in the bladder cavity. The hæmorrhage in cases of tumor of the bladder, especially of the mucous polyp, is at times very considerable. The erosion of a blood-vessel of moderate size in the submucosa by the presence of a rough calculus may result in extensive loss of blood. Cases have been reported of rupture of varices in the wall of the bladder, usually near its base. Such enlarged veins may exist without known cause, or they may be (and this is much more frequently the case) associated with inflammatory processes of a chronic nature in the immediate vicinity of the bladder; of these, the most common is an enlarged prostate gland, and as this condition becomes more and more pronounced, the attacks of congestion become more and more frequent, until finally the veins of the prostatic plexus, which drain those of the posterior urethra and the base of the bladder, become permanently enlarged. In subsequent attacks of retention which are sure to complicate this condition, the not unduly rough introduction of an instrument into the bladder may easily rupture one of these veins, more distended than usual, in the posterior urethra, and thus cause extensive hæmorrhage, which will flow into and distend the cavity of the bladder, for the posterior urethra is to be classified, from its embryological development, as a part of this organ, and any fluid escaping into its cavity will immediately pass on into the cavity of the bladder. These enlarged veins are to be encountered in every case of suprapubic cystotomy in an elderly person in whom the prostate is affected, and are an annoying and troublesome feature of the operation.

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* Read by invitation before the Harlem Medical Association.

Hæmorrhage into the interior of the bladder from the wall of this organ or from that of the posterior urethra, as the case may be, presents distinct indications for treatment, according to the rapidity of escape of blood from the ruptured blood-vessels. If the blood escapes slowly but constantly, it may not collect in the cavity of the bladder, being easily voided in the urine. Here the progressive loss of blood in itself constitutes the only source of danger to the patient. Under these circumstances the indication is merely to stop the flow of blood. For this purpose a suprapubic operation is not necessary when more moderate measures will succeed in stopping the hæmorrhage. This may be accomplished in a majority of cases by the injection through a soft-rubber catheter of aqueous solutions of mild astringents, which, coming in contact with the bleeding point, will usually check the hæmorrhage. For this purpose the cavity of the bladder may be irrigated with a solution of nitrate of silver (1 to 500 up to 1 in 5,000), or with a 1-to-80 solution of carbolic acid, or with a very weak solution of chloride of zinc; only when these means fail is it justifiable to open the bladder for the direct purpose of seizing the bleeding point.

We have to contend with different factors when the escape of blood is rapid and when it accumulates in the bladder. The danger of hæmorrhage still exists, but, in addition, there is present the danger of rupture of the bladder from overdistention, as well as the dangerous symptoms of suppression, that result from the mechanical obstruction of the mouths of the ureters by the accumulated mass of clots of blood in the bladder cavity itself.

The indications are clearly set forth: first, the hæmorrhage must be stopped; secondly, the cavity of the bladder must be emptied to avoid the possibility of rupture; and, thirdly, the obstruction to the flow of urine must be removed. These different indications can all be successfully met by the operation of cystotomy. Before proceeding to operation, however, an attempt to withdraw the blood from the cavity of the bladder by means of an aspirator may prove successful, provided that the clots are not too large. This is not a dangerous procedure, but, if it succeeds, it is merely palliative, and, of course, does not directly check the flow of blood, although it relieves for the time being the danger of suppression. If, however, the bleeding continues and the clots reaccumulate, operation only will enable us to check the hæmorrhage.

For this purpose the suprapubic operation is much superior to any other form of cystotomy for the following reasons: First, the bladder can be opened in a much shorter time, and the opening can, if necessary, be enlarged, so as to allow of the escape of its contents in a very rapid manner. The main advantage, however, consists in the fact that, after this step of the operation is completed, the source of the hæmorrhage can be more surely ascertained than by any form of perineal operation, where one must necessarily work in the dark. If the bleeding point is found in the mucous membrane of the bladder, it is feasible to apply a ligature, or, this failing, the actual cautery or some other suitable hæmostatic may be applied to the bleeding point. If the hæmorrhage is of an oozing character that does not yield to this treatment, the pressure of a tampon may be applied, without interfering with the outflow of urine through the ureters, by placing on the bleeding point above or below these orifices, as the case may be. The tampon in position will then not interfere with the free exit of urine through the abdominal wound. If, however, after the bladder is thoroughly cleaned and emptied, blood is seen to issue from the orifice of the posterior urethra, this space may be easily packed with an intravesical tampon of iodoform gauze, to which is firmly attached a loop of silk. This silk, being carried by means of a soft catheter through the urethra, draws the tampon after it securely into place. Here again the urine would experience no difficulty in making its way through the wound, while in one or two days the tampon could be removed when all danger of recurrence of further hæmorrhage would have ceased.

In the suprapubic section we work in the light and the results are correspondingly satisfactory. The perineal operation could never give such good results, for, although in this way the evacuation of the bladder could be as easily accomplished, yet the nature and source of the hæmorrhage would be largely a matter of doubt, while even if the bleeding point were seen, it would be impossible to apply a ligature, and, as any tampon would, necessarily, be unskillfully placed, the consequent cessation of hæmorrhage would be more or less a matter of luck.

Any form of cystotomy, however, is of advantage for still another reason. In all cases where hæmorrhage takes place the wall of the bladder is usually in a condition of chronic inflammation, its muscular fibre in a state of weakness, and in places of actual degeneration. As a result of operative interference, rest is assured to the bladder wall, and opportunity is given it to thoroughly recuperate in strength as well as for the inflammatory condition to subside. One should, however, not only stop the hæmorrhage, but the cause of the trouble should also, if possible, be removed, and in this way the operation be made doubly curative. Any coexisting calculus or any bleeding papilloma can easily be removed, and cancer in its early stages is likewise amenable to radical measures, a portion of or even the whole bladder having been removed for this condition in a number of instances. In the latter stages of this disease, however, cystotomy can only be a palliative measure.

The following case, the history of which is herewith reported, has a number of interesting features:

M. F. C., aged forty-four years, single. Previous history negative, with the exception of an attack of gonorrhœa twenty-five years ago. Three years ago patient presented the usual symptoms of a beginning stricture of the urethra. Sounds were passed for a year by his family physician, relieving the stricture. Treatment was discontinued and patient experienced no further difficulty until one month ago, when the same symptoms returned. Sounds were again passed, this time slight bleeding following each attempt. Yesterday the doctor passed a No. 26 French. A few minutes after, the patient experienced a desire to pass water, the attempt to do this, however, proving ineffectual. Small quantities of blood only escaped *per urethram.* In the course of an hour the patient began to experience pain in the region of the bladder, which gradually increased in severity and was accompanied by a constant desire to urinate, no urine, however, escaping. At the time of his admission into the Presbyterian Hospital, New York, six hours after the passage of the sound, physical examination revealed the presence of an oval swelling above the symphysis pubis, extending up to the umbilicus, the surface of which was smooth, the consistence firm and very elastic, the skin and subcutaneous tissues easily movable over it, the swelling slightly movable from side to side and on the deeper parts. On percussion, flatness was elicited over the tumor, the abdomen being elsewhere tympanitic. The urethra was easily permeable to soft and hard instruments alike, although the passage of catheters failed to withdraw anything but several small clots of blood. To a soft catheter an aspirator was attached, but this, too, failed to diminish the size of the bladder, withdrawing a few elongated clots of blood. The patient's general condition was fair, the temperature 102°, the pulse varying between 110 and 120, but full and of high tension, the patient suffering principally from pain and commencing to show symptoms of suppression. An operation was advised and accepted. Ether was administered, a rectal bag inserted to steady the bladder, containing about eight ounces of water, and the operation of suprapubic cystotomy performed in the usual way. After division of the transversalis fascia, the bladder presented in the abdominal wound, the layer of intervening fat being very thin and easily pushed upward. With a bistoury the bladder wall was incised, which was blue, very thin, and very elastic. Through the opening there escaped a large amount of dark, clotted blood, with a considerable quantity of equally dark fluid. Inspection of the bladder cavity revealed no bleeding point, neither was anything of an abnormal nature to be discovered in or on the bladder wall. After the cavity had been completely emptied of its bloody contents, the orifice of the urethra was exposed and inspected. No blood was seen to exude from the posterior urethra. A tampon of idoform gauze was loosely placed in the vesical cavity, after the ureters had been seen to discharge clear urine, and the usual antiseptic dressing applied. The patient reacted well from the operation, and on recovery from the anæsthetic had experienced absolute relief from the pain. The condition of the prostate was found to be normal, by both rectal and vesical examination. Following the operation there was slight bleeding from the external urethra which ceased entirely in a few hours. The temperature was 100° on the following day and the pulse had diminished in both tension and frequency. On the second day the gauze was removed and replaced by a smaller piece, less loosely packed. The patient made an uneventful recovery. During his convalescence sounds were passed every two or three days without bleeding or pain. One month after the operation patient was discharged from the hospital, the wound having entirely closed, and the urine passing without difficulty through the urethra.

There are several points worthy of mention in connection with the case. In the first place, the enormous distention of the cavity of the bladder without rupture taking place. Presumably the healthy condition of the bladder wall rendered this possible. Secondly, from what point did the hæmorrhage take place? The normal condition of the wall of the bladder, together with the history, renders it probable that some blood-vessel in the posterior urethra, having been damaged by the passage of the sound, had given rise to this extensive hæmorrhage. At the time of the operation the bleeding had entirely stopped. This can be explained by the fact that the accumulation of blood had been so extensive and the cavity of the bladder had become so distended that the resulting coagulum had acted as an intravesical tampon effectually checking the hæmorrhage.

The rapidity of the contraction of the bladder after evacuation of its contents should also be noted. In an almost incredibly short space of time the bladder had assumed its normal size, while the blue congested condition of its wall had changed to the pinkish color so characteristic of its normal mucous membrane. This contraction of its wall also allowed the abnormally dilated blood-vessels to regain their usual calibre, and thereby tended to prevent a recurrence of the hæmorrhage.

Only comparatively few cases are on record where any operation has been performed for the relief of this condition. Zuckerkandl has reported one hundred and twenty cases of suprapubic operation, among which are four performed for the relief of hæmorrhage. In one the hæmorrhage had been preceded by the passage of a metallic sound. Recovery followed the operation. In another the patient suffered from stricture of the urethra, in which an attack of retention had been relieved by suprapubic puncture. Hæmaturia followed and a suprapubic operation was performed. The eventual result of the operation is not stated.

In this latter case the source of the hæmorrhage was apparently from one of a number of dilated veins on the posterior surface of the bladder. In a third case, the outcome of which is not stated, the operation was performed for hæmorrhage following the passage of an ordinary catheter. The patient had previously introduced a metal instrument. In the fourth case, one of vesical lithiasis, a cure was accomplished for hæmaturia following an ordinary cystoscopic examination. Here, again, large veins were found on the posterior surface of the bladder.

Spanton reports a case of a man, forty-four years of age, suffering from acute prostatic difficulty of three weeks' duration. Urine was voided with constantly increasing difficulty until two days before admission, when complete retention ensued, which was relieved by a silver catheter. On the last occasion this was followed by considerable hæmorrhage. On admission, the fundus of the bladder was opposite the umbilicus, and the catheter withdrew three pints of blood-stained urine. Prostate enlarged and tender. Bladder irrigation followed by temporary improvement. Several days after, however, the passage of the catheter was followed in two hours by the distention of the bladder to the umbilicus. Suprapubic operation; bladder evacuated of blood, but the patient died three hours after operation, never rallying from its effects. Autopsy showed an abscess of the prostate, which had ruptured into the urethra, in doing which an artery had been eroded, the orifice of which was large enough to be seen with the naked eye.

Armstrong reports a case of fracture of the first lumbar vertebra, followed by paralysis of the bladder, rectum, and loss of sensation and motion in the lower extremities. On the fourth day after the accident the urine became bloody, and in the next few days became so marked that clots would fill the catheter, until in five days the urine could not be withdrawn, and the suprapubic operation was performed. Two weeks after operation death resulted from "progressive loss of flesh and strength." Autopsy revealed only the fracture of the vertebra.

Cheesman reports an interesting case of hæmorrhage into the bladder, occurring in attacks and eventually distending the cavity so completely as to necessitate operation. The incision into the completely distended bladder was followed by the evacuation of a large amount of clotted material. Hæmorrhage still persisted, however, the bladder rapidly filling up with blood, only controlled after a time by pressure of a tampon in the vicinity of the trigone. After cessation of hæmorrhage by this means, examination revealed an opening in a large varicose vein, from which came the hæmorrhage. Applications of Monsel's solution were made, and the cavity of the bladder was packed with iodoform gauze. No further bleeding resulted, and the patient made a good, though tardy, recovery.

In conclusion, it may not be amiss to mention an accident that may occur in performing the operation of suprapubic cystotomy. I refer to the opening of the peritoneal cavity. As a rule, the distention of the bladder and rectum raises the peritoneal attachment of the bladder away from that organ, leaving the properitoneal space of Retzius freely exposed. Under this normal arrangement the peritonæum could be wounded only by accident. In some unusual cases, however, the parietal peritonæum is closely adherent to the symphysis pubis, and under these circumstances the surgeon would inevitably open the cavity, as the peritonæum would not be raised from the anterior surface of the bladder by the injection of the bladder and rectal fluid. This accident is, however, entirely unavoidable, and it is very fortunate that this arrangement of the peritonæum rarely obtains.

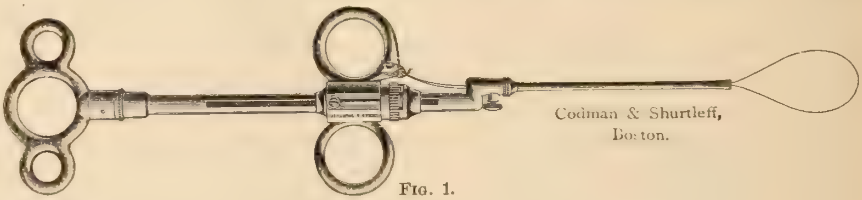

Fig. 1.

If in the course of an operation this accident does take place, the incised peritonæum, after being detached from the abdominal wall, can be sutured to the anterior aspect of the bladder, leaving between its two edges an oval space two inches in length, through which an incision could be made into the cavity of the bladder after an interval of several days had allowed forming adhesions to shut off and thereby protect the general peritoneal cavity.

SOME REMARKS ON
REMOVAL OF THE TONSILS.*

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What I shall have to say will have reference to the choice and manner of operation, and no mention will be made of the indications for removing the tonsils. I have assumed that any adhesions between the tonsil and the pillars are to be broken up as much as possible preliminary to operation. Although careful search of medical literature does not show many instances of severe hæmorrhage following tonsillotomy, we must acknowledge that very many cases of troublesome bleeding occur which are never reported. I have to judge from my own personal experience, but I have been told by about a dozen patients that they suffered from very copious bleeding at the removal of one or both tonsils, so that they were much weakened and their recovery considerably retarded. These were all adults and their cases were never reported. Favorable cases are more interesting to write, and are considered to add more to one's reputation than unfavorable ones, and human nature still likes to put the best foot forward. Let us consider first the removal of large projecting tonsils. In children adenoid disease usually coexists and requires removal. If pharyngeal and faucial tonsils are to be removed at the same time under anæsthesia, I am in the habit of first removing the tonsils with the écraseur, and the bleeding is practically none. This is a great advantage, because the child is not weakened, there are no clots in the throat, and the more bloody adenoid operation can follow with greater security. It is true that there is sometimes but little blood lost when the guillotine is used in such cases, but in delicate children every drop of blood may be valuable. Another consideration is of importance. If large tonsils were found in large mouths only, the adjustment of the amygdalotome would be easier than it really is, but small mouths and narrow jaws are frequent accompaniments of very large tonsils, and it may be next to impossible to get a large enough instrument well into the mouth. In the écraseur the loop can be made of sufficient size to go over the largest tonsil without taking up any room at all. I have removed a great many tonsils in children and adults, and have tried various écraseurs and snares. The one that I show you here (Fig. 1) I had made by Codman & Shurtleff, of Boston. I started with a Hooper écraseur as a basis, and have modified it by straightening it, so as to give a pull in a direct line. The cannula is flattened and widened at the end. I have lengthened the screw, so as to be long enough to cut through the largest tonsils, and I have strengthened the weak places. I have also changed the shape, direction, and position of the pins to hold the wire. I have been pleased with the result, and have succeeded in cutting off some very large tonsils without any hæmorrhage. I have used No. 5 or No. 7 piano wire, depending on the supposed toughness of the tonsils. Small soft wire bends too easily, does not retain its shape, and slips off the tonsil too easily. Probably No. 7 wire is the best for general use. The loop is made of the required size, bent to the shape of the tonsil, and pushed over it, the tonsil being pressed from outside with the finger, or pulled from the inside with forceps into the loop, and then drawn tight. The screw can then be set, and the turning of the crossbar at the end proceed as rapidly or slowly as is desired. In children I have usually cut through without delay, but in adults I have gone more slowly. Professor Moritz Schmidt, in his recent work *Krankheiten der oberen Luftwege*, page 229, recommends the use of the galvano-cautery snare in such cases. Lichtwitz, in *Archiv für Laryngol.*, zweiter Band, page 318, also expresses preference for the hot wire. But I do not see the advantage of heating the wire, with the possible risk of burning the neighboring parts, and having a wound longer in healing and more prone to inflammation, when, with a proper, strong écraseur and suitable wire, the tonsil base can be constricted and cut through *ad libitum* and, it seems to me, without risk of hæmorrhage. Dr. Clarence Rice has recommended the use of a dull guillotine in certain cases to obviate hæmorrhage; but the wire, which both divides and constricts and can be operated as slowly as desired, seems to me much more rational. Bosworth advocates the use of the écraseur in adults, but I have thought his instrument hard to thread, and the écraseur movement not so satisfactory to manipulate as the one I show you. Moreover, the cannula is at an angle, and the wire works at a disadvantage in not having a straight pull. Lenox Browne's écraseur I have never tried. Ingals recommends in children a polypus snare. I have not found this satisfactory, because it is often too weak and has not a long enough play for a large tonsil, and may have to be threaded a second time. I have thought that the large, firm tonsil required a very different instrument from the soft mucous polyp. I should say that, according to my experience, projecting tonsils in children under anæsthesia, where the adenoid operation was to follow, or in children where it was possible that there might be hæmorrhage, or where it was desired that there should be no hæmorrhage, were well and safely removed with a strong écraseur.

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* Read before the American Laryngological Association at its seventeenth annual congress.

In children without anæsthesia, where adenoid operation is to follow, the amygdalotome is quicker and probably safe enough, and preferable, except as I have indicated above, or where the tonsils are so large in comparison with the mouth that the ring of the amygdalotome can not encircle the tonsil well. In adults, I agree with Bosworth and differ from Ingals in regarding the écraseur as a very valuable instrument to obviate the risk of hæmorrhage. Perhaps the fact that Bosworth uses a strong instrument especially adapted for the tonsils, while Ingals uses a polypus snare, as I have said, may account for their divergence of opinion. I have removed a great many large and tough tonsils in adults with the écraseur, and have never had more than the slightest flow of blood. I have the patient hold ice in the mouth, and I apply cocaine to the tonsil before operating. Ice is used freely afterward to diminish the tendency to swelling, which almost always occurs in adults after amygdalotomy. There are, of course, cases where the shape of the tonsil does not admit of a good adjustment of the wire loop, and where the guillotine is better suited. I have also used in such cases with considerable satisfaction the punch of Ruault to replace the tonsillotome. With it large pieces can be removed with ease, with but little pain, and slight hæmorrhage. Where the tonsil does not project beyond the pillars sufficiently to permit the use of the guillotine or écraseur I have been in the habit of using a punch, either that of Ruault or the smaller conchotome of Hartmann, with which the deeper-seated masses, such as those high up near the junction of the pillars, can be thoroughly removed. This latter punch acts as a forceps to pull the tissue out from its bed, and also serves to cut it off. If the tonsil is very tough it does not always cut through easily. I have had another punch made with more powerful jaws and stronger leverage to remedy this defect (Fig. 2). Scissors may naturally be used to supplement the cutting. In order to open up the tonsil and give access to the deeper parts as well as to furnish surfaces for the punch to take hold of, I have used curved or other knives, such as those advocated by Dr. G. A. Leland. These are thrust from one crypt into another and the intervening tissue cut through. The punch then easily removes the loosely hanging fragments. In this way the diseased follicles and the deep-seated hypertrophies are got rid of.

For a number of years I had used the galvano-cautery puncture very faithfully, but must confess that the tediousness of the process and the inflammation which sometimes followed were causes of great dissatisfaction. I have often been surprised to find how little reduction in size had followed quite a vigorous burning. With the punch I have had but little complaint of pain after using a five- or ten-per-cent. solution of cocaine, and the bleeding has been very moderate. I get the patient to hold pieces of ice in the mouth, which serves to numb the throat and check the bleeding. I have often reduced the size of a tonsil in this way in two sittings as much, or more, than I could have done in four or five times as many *séances* with the cautery.

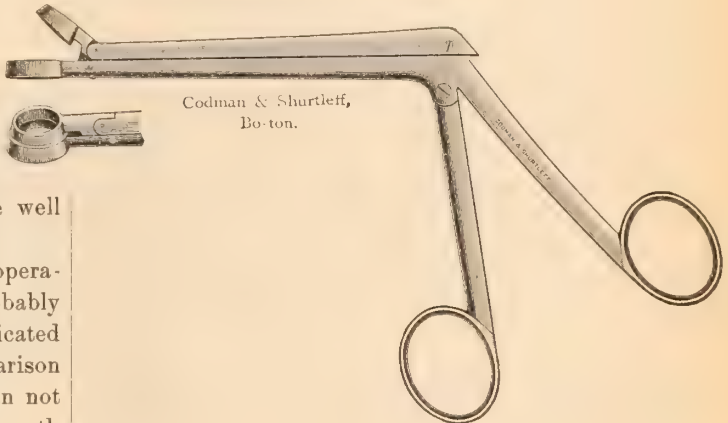


FIG. 2.

In a paper which I have recently received from Dr. Bliss, of Philadelphia, he recommends the removal of pieces of the tonsil with scissors. It is necessary to seize the tonsil with forceps and then cut off the different pieces with scissors. The punch acts both as holder and cutter, and is able to cut at right angle to its long axis, making it much better adapted for being thrust in between the pillars. Dr. Yerwant, of Padua, in the *Archivio Italiano di otologia*, vol. i, 1894, p. 147, recommends a forceps not unlike the Weir side-cutting forceps for the nose. This seems to me not so good as a strong instrument that at its end cuts at right angles to its long axis. In patients who are bleeders, I should prefer the cautery; also where pieces adherent to the pillars are to be destroyed and in tonsils of moderate size with a few enlarged or diseased follicles.

After removal by guillotine or écraseur the punch can be used as a trimmer of ragged ends, parts which the other instruments have omitted, and to go deeper in between the pillars.

A SYSTEM OF CIRCULAR BANDAGING.

By GEORGE HENRY FOX, M. D.

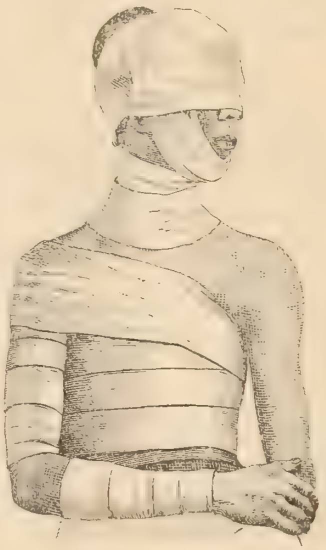
SIXTEEN years ago an elastic tubular bandage was first used by the writer and recommended in the treatment of eczema and ulcers of the leg. This was made of pure rubber and drawn over the foot like a stocking leg. Its usefulness was somewhat impaired by the difficulty of applying it, and soon it was found advisable to cut the tube in sections and to make the continuous bandage by allowing each section or broad band to overlap the edge of the adjoining one to the extent of a quarter or half an inch. In many cases of eczema, both acute and chronic, the application of rubber to the affected skin, especially when combined with gentle pressure, will be found to be far more curative in its effect than the ointments commonly employed. This plan of treatment, though an old one, is by no means as frequently employed as its great value would suggest, and it is certain that in an eczema of the leg, for example, a few rubber bands three or four inches wide and of proper calibre are far more readily applied and much more agreeable to the patient than the rubber sheeting or long rubber bandage which is often employed. For patients with leg ulcers who are obliged to be more or less upon their feet, as is the case with the majority seen in dispensary practice, the use of the circular bandage affords a method of treatment which is at once most simple and effective.

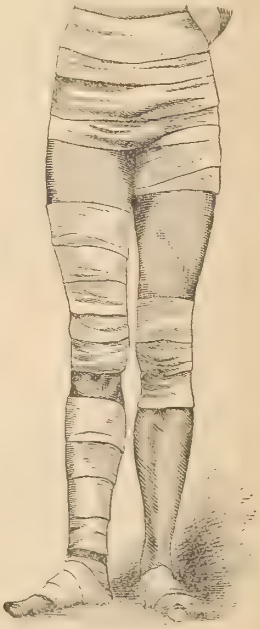
In the treatment of leg ulcers the garter bandage will usually insure therapeutic results which are astonishing to those who have pinned their faith to stimulating ointments, dusting powders, and the ordinary roller bandage. The constant pressure exerted lessens the congestion and relieves the pain of an ulcer which is irritable, and quickly flattens out the raised infiltrated margin of a chronic indolent ulcer.

In case of a varicose ulcer healing will often be promoted by the application of a band above or below the knee, thus lessening the downward pressure of the column of blood and consequent congestion of the leg.

But while pure rubber applied to an eczematous surface often produces a most brilliant curative result, it is liable in case of a delicate skin, especially in hot weather, to excite irritation, and hence would be objectionable as a substitute for ordinary bandages. Recently various forms of elastic webbing have been recommended for bandaging purposes and where simple pressure is required; this webbing, being light and porous, has a decided advantage over the pure rubber. The webbing manufactured by the Elastic Surgical Bandage Company (47 Broad Street, New York) is the variety of webbing which I have used with the greatest satisfaction.

Of the use of the elastic webbing in roller form nothing need be said, as the object of this brief paper is to call the attention of the reader to the novel application of this webbing in the form of a circular or "garter" bandage. This can readily be made by cutting the webbing in pieces of varying length and sewing the ends together, thus making elastic bands or broad garters of varying size. With a supply of these at hand almost any part of the body can be quickly, smoothly, and continuously bandaged, and any degree of pressure exerted which is likely to be required. The lightness and porosity of the webbing make the circular bandage extremely agreeable to the patient who wears it. Save where the bands overlap at the margin there is but one thickness of bandage, and no ordinary muscular effort on the part of the patient is likely to cause it to loosen or to move from its proper position.





The accompanying illustrations will give a better idea of the circular bandage and its adaptation to various parts of the body than any extended description. Its utility will readily suggest itself, but will be best appreciated after a practical test. In the treatment of skin diseases it will be found of great convenience for the retention of dressings. The steady pressure which it exerts will often greatly enhance the value of an ointment applied to the skin. In varicose conditions of the leg it serves an admirable purpose and is far preferable to the roller bandage or to the ordinary heavy elastic stocking, being readily applied or removed, certain to remain in place, and most agreeable to the patient on account of its light texture.

In place of the silk knee caps, anklets, and other joint bandages frequently used, it has the advantage of being equally efficacious and far more economical, and therefore especially adapted to hospital and dispensary practice, while the cheapness of the circular bandages would warrant most patients in throwing them away when soiled, yet they can be washed. This, however, must be done in a certain way. If the bandages are twisted or wrung in the process of washing, the rubber strands in the webbing are broken or pulled out of place; but if the bandages are laid flat and carefully sponged with soap and water they will appear when dried to be as good as new.

In bandaging any portion of the body it is well to have a supply of bands of various sizes at hand. With a tape measure the actual circumference can be ascertained and bands selected of a calibre one or more inches smaller, according to the degree of pressure that is required. They can be quickly removed at any time and readily reapplied by the patient without any special instruction or practice. The simplicity of this method of bandaging is apparent at a glance. Its therapeutic efficacy can be demonstrated in the conditions already mentioned, and the extent of its application in general surgical practice can only be determined by those who may be led by a suggestion of its use to make a trial of its merits.

EFFECT OF ANTITUBERCLE SERUM IN EXPERIMENTAL TUBERCULOSIS.

By S. W. HEWETSON, M. D.,
SARANAC LAKE, N. Y.

Although much has been written during the last six months on the action of antitubercle serum in the cure of tuberculosis in the human being, nothing appears to have been done with a view of determining its action on tuberculized animals.

At present it seems rather premature to talk about treatment with antitoxine serum, as no experimental evidence yet exists that any artificial immunity can be produced against this disease, or that such an immunity if produced in animals would be transferable through the serum.

In view, however, of the fact that experimentation with this substance has been carried at once to the bedside without such evidence, a study of the influence of this serum under strictly experimental conditions may not be without interest.

The experiment about to be reported was conducted in the Saranac Laboratory under the personal supervision of Dr. E. L. Trudeau.

On account of the great scarcity of guinea-pigs at that time, owing to the introduction and manufacture of diphtheria antitoxine in New York, only two controls were available, but as the course and duration of the disease in these two animals corresponded closely with that of control animals of other experiments, inoculated with the same virus, the experiment was practically controlled by a much larger number of animals. The serum was purchased n half-ounce supplies, as needed, from Messrs. Heath and Beatty, distributing agents for Dr. Paquin. It never had any putrefactive odor and only on one occasion was it at all cloudy, but as an agar plate preparation yielded no growth nor did any abscesses ever occur at the site of injection, it may fairly be concluded that it was free from contamination.

It was kept in an ice chest except when taken out to withdraw the amount needed for daily use.

Appended are the notes and results of the experiment as copied from the laboratory records.

June 8, 1895.—Crush spleen of a slightly tubercular guinea-pig killed twenty-one days after inoculation, add distilled water, filter through cotton cloth. Cover-glass preparation from resulting solution only shows two tubercle bacilli.

Take seven healthy guinea-pigs—five test and two controls. Inoculate all in right groin with 0·75 c. c. of above solution.

Test animals receive daily subcutaneous injections of Paquin's serum, six minims to each animal.

July 2d.—Inject six minims every other day, on account of small supply of serum.

8th.—Daily injections resumed.

20th.—Each test animal receives daily injections of seven minims up to time of death.

The following table, copied from the same source, shows weight of animals at time of inoculation, weight twenty-one days after inoculation, number of days each animal lived, and average length of life for controls and treated:

Test Animals.

	June 8th (date of inoculation). Grammes.		June 29th. Grammes.		Days.
No. 1	545		438	Lived	42·0
" 2	300		312	"	48·0
" 3	490		430	"	64·0
" 4	400		410	"	50·0
" 5	475		425	"	50·0
Average weight	442	Aver. weight	403	Average length of life	50·8

Controls.

No. 1	405		345	Lived	64·0
" 2	685		610	"	53·0
Average weight	545	Aver. weight	477·5	Average length of life	58·5

The lesions in no way differed from those usually observed in tubercular pigs, nor were there any differences to be noted between the lesions of controls and of test animals.

The results certainly seem to justify one in concluding that antitubercle serum has no influence in prolonging the life of tubercular guinea-pigs.

The Medical Corps of the Naval Reserve.—Dr. H. Hoyle Butts has been promoted to the rank of surgeon in the First Naval Battalion, so that there is a vacancy in the rank of assistant surgeon.

Changes of Address.—Dr. George M. Edebohls, to No. 59 West Forty-ninth Street, New York; Dr. John Remer, to No. 1553 Madison Avenue, New York.

The City Hospital, Blackwell's Island.—Dr. Frederick Holme Wiggin has been appointed visiting gynæcologist.

WHOOPING-COUGH.

A REPORT OF TWO CASES.

By E. T. DUKE, M.D.,
CUMBERLAND, MD.

An unusually grave mortality in a recent epidemic of whooping-cough leads me to believe that more should be done in our efforts to prevent it, as the treatment is at present so unsatisfactory. Remedies used and highly extolled are numerous, but the management of the disease, especially if complicated, is extremely trying. I have two cases to report of great severity and rather remarkable complications.

Case I.—Mary G., colored, aged sixteen years, with family history of phthisis. Six months before present illness she had bronchitis, which lasted several months. The whooping-cough began in the usual way, but soon became severe, and paroxysms caused extreme prostration, bleeding from the nose, convulsive movements, but no actual spasm.

Pleuropneumonia of both lungs developed in the second week. The temperature ranged from 102° to 105° F.; pulse, from 120 to 160; and respiration, from 40 to 60, and later 80 a minute.

Pericarditis followed, and the sufferings of the patient were terrible to witness.

The violent spasmodic efforts of coughing would cause her to cry out with intense pain, bleeding from the nose was profuse, there was considerable expectoration of bloody, viscid mucus, and the efforts of breathing were laborious and gasping. She continued in this condition for nearly a week, when death brought relief from her sufferings.

Symptomatic treatment was employed.

Case II.—Bessie B., colored, aged seventeen years. She had been until a year before in excellent health. When I saw her she had been sick for some months, and, on examination, showed pregnancy in the eighth month. Her limbs and abdomen were swollen and œdematous. Face also swollen, and eyeballs prominent, which was due, in part at least, to violent spasmodic attacks of whooping-cough. These attacks would come on very frequently and last for some minutes, causing convulsive jerking of arms and limbs, but at no time had any convulsion been noticed.

Treatment with bromides relieved somewhat the severity of the paroxysms.

The patient was five miles in the country, and I was not able to see her every day. She had one convulsion, due, I first thought, to the cough.

The same night labor pains began, and she was delivered of a mature male child. During labor the cough continued, and she had several convulsions. After the birth of the child she seemed better for a day, but convulsions followed, and, after remaining in an unconscious condition all night following the afternoon on which I called, she died. Were the convulsions due to whooping-cough, or was it eclampsia?

The Tri-State Medical Society (of Iowa, Illinois, and Missouri).—At the last meeting the following officers were elected: President, Dr. Robert H. Babcock, of Chicago; vice-presidents, Dr. A. H. Cordier, of Kansas City, and Dr. W. A. Todd, of Chariton, Iowa; treasurer, Dr. C. S. Chase, of Waterloo, Iowa; secretary, Dr. G. W. Cale, of St. Louis. The next meeting will be held in Chicago on the first Tuesday, Wednesday, and Thursday in April, 1896.

THE
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A Weekly Review of Medicine.
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Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, NOVEMBER 9, 1895.

THE MINOR CITY HOSPITALS.

It seems that the reorganization of the medical staff of the Harlem Hospital which was carried out by the Commissioners of Public Charities and Correction several weeks ago was only the first move, tentative perhaps, in the scheme of reorganizing in like manner the staffs of all the minor hospitals of the city that are under the commissioners' government. When the overturn in the Harlem took place we expressed our sense that an injustice had been practised, no matter how demonstrable it might be that the new plan was likely, on the whole, to prove an improvement. Its extension to all the other city hospitals seems to us to involve the commissioners in a grave responsibility. In the face of public expressions of disapproval, they have persisted in their course. Doubtless they feel assured that the medical profession, however much it may grumble, seldom carries its point when it is arrayed against the powers that be. There is, alas, too much ground for their entertaining such a conviction, but it is just possible that there may come a point in the struggle at which right may find might on its side.

The County Medical Association has expressed its opinion of the commissioners' course in this matter, and it is to be hoped that the Medical Society of the County of New York, an older organization and one of nearer approach to official standing, will also consider it. We see no reason, indeed, why the Academy of Medicine, really our most important medical body, should not take it up. It ought to be discussed utterly without regard to the interests of individual physicians or the privileges of the medical colleges, and the result of such a discussion of it, put in forcible but temperate terms, would, we are persuaded, make an impression upon the public. Let not such an injustice be submitted to without an effort to withstand it.

MINOR PARAGRAPHS.

THE NEW YORK ACADEMY OF MEDICINE.

The 1895 issue of the *List of Fellows*, a little pamphlet of thirteen pages, tells a tale of prosperity and usefulness seldom excelled in the annals of medical institutions. The academy was organized in 1847, and not incorporated until 1851. For many years its membership was small and its meetings were held in hired quarters that were rather cheerless. Then it was able to acquire a well-situated dwelling house which, with some alterations and an extension, answered its purposes very well for a number of years. For a considerable time now it has owned a commodious and well-appointed building erected for the purpose. It has, or had at the time the pamphlet was issued, 792 resident fellows, 70 non-resident fellows, 29 corresponding fellows, and 6 honorary fellows. All this betokens the excellence of its management, and, we think, foreshadows still greater achievements to come.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 4, 1895:

DISEASES.	Week ending Oct. 29.		Week ending Nov. 4.	
	Cases.	Deaths.	Cases.	Deaths
Typhoid fever	50	9	36	7
Scarlet fever	47	2	56	5
Cerebro-spinal meningitis	4	4	1	2
Measles	52	9	73	5
Diphtheria	180	23	137	27
Small-pox	0	1	0	0
Tuberculosis	114	118	145	121
Leprosy	1	0	0	0

The New York Academy of Medicine.—At the last general meeting, on Thursday, the 7th inst., the order for the evening was to be as follows: Some Observations on the Effects of Horse Serum Injections, by Dr. Henry D. Chapin; The Pathological Changes resulting from Serum Injections, by Dr. William Vissman; The Physiological Action of Serum Injections, by Dr. William H. Porter; and the Wesley M. Carpenter Lecture, by Dr. H. M. Biggs.

At the next meeting of the Section in General Surgery, on Monday evening, the 11th inst., the following papers will be read: Casper's Ureter Cystoscope. Demonstration of the instrument with a Report of Two Successful Cases of Catheterism of the Ureters in the Male and Female with the Same, by Dr. Willy Meyer; The Disadvantages of Non-absorbable Sutures in Hernia Operations, by Dr. W. B. Coley. Patients will be presented and pathological specimens, new instruments, and apparatus exhibited.

At the next meeting of the Section in Genito-urinary Surgery, on Tuesday evening, the 12th inst., Dr. Ramon Guitéras will report a case of pyonephrosis due to nephrolithiasis, and Dr. George K. Swinburn will report one of urethral chancre. New instruments will also be exhibited.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 14th inst., papers on the Stamford epidemic of typhoid fever of 1895 will be read as follows: The Origin of the Epidemic, by Dr. Schavoir, of Stamford; The Clinical Aspects, by Dr. S. Pierson, of Stamford; and The Pathology of Fatal Cases, by Dr. W. P. Northrup.

At the next meeting of the Section in Orthopædic Surgery, on Friday evening, the 15th inst., Dr. Reginald H. Sayre will read a paper entitled The Results of Removal of the Astragalus Contrasted with Forcible Manipulation. Dr. Sayre will present a case illustrating his paper, also a case of spasmodic torticollis. Specimens and new instruments will be exhibited.

The Board of Regents of the University of the State of New York.—In compliance with repeated requests, the regents have opened an office in New York city for the accommodation of the immense amount of business connected with the university that comes from the metropolis. Mr. Asa O. Gallup, formerly chief clerk in the regent's office at Albany, has been appointed to take charge of the New York office. He will have all publications, blanks, and necessary records for the accommodation of law, medical, dental, and veterinary students, and for all the professional, academic, and higher examinations conducted by the university. The New York office is located at No. 10 East Forty-second Street, and will be found open during the school week from 9 A. M. to 4 P. M., and from 7 to 9 P. M. Business hours will be from 9 A. M. to 12 M., but the deputy will see all callers at other hours if they can not come between 9 A. M. and 12 M.—*Buffalo Medical Journal.*

Note of a Case of Loss of Memory of Events before the Accident which followed a Cranial Injury.—The following case, reported by the patient, a distinguished member of the scholastic profession, is interesting as bearing on the subject illustrated by a series of cases I published, with comments, some years ago. In this one the loss of memory has been permanent for certain subjects extending over a certain area of time preceding the accident. In all other respects the mental faculties are of a very high order. Joseph Bell.

Sir: In June, 1858 or 1859 (I could find the exact date if necessary), I was traveling from London Bridge to Ramsgate on the S. E. R. There was a bad accident at Chilham, near Canterbury. I was badly hurt, and was taken in an unconscious state to Canterbury, and when I recovered consciousness I found myself in bed there badly wounded about the head.

Every event of the day on which the accident took place was quite clear and fresh in my memory up to the time of my taking all the tickets for our party some three hours before the accident happened. But those three hours always remained a perfect blank to me, in spite of my efforts to recall the events of them. And yet I am told that I did things in them which I should have thought it would be very unlikely that I should forget—*e. g.:*

1. I arranged about the baggage of the whole party being labeled and put into the train, and, boy as I was, was proud of being allowed to do so.

2. With my brothers (I am told) I was engaged in "chaffing" an engine-driver whose train was for some distance running alongside of us at the same rate of speed—a thing I have never witnessed before or since.

3. I got out of my carriage at Ashford, took some tea to my mother in her carriage, and took the cup back again to the refreshment room.

These and many other little things said and done passed away entirely from my mind, the events up to a certain hour, as I have said, remaining fresh and clear still.—I am, etc.—*Edinburgh Medical Journal.*

The Society of Medical Jurisprudence.—At the next meeting, on Monday evening, the 11th inst., the Hon. David McAdam is to read a paper entitled Insanity, Popular Errors Corrected. The society's annual dinner will take place on Saturday evening, December 21st, at the Hoffman House.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 20 to November 2, 1895:*

Arthur, William H., Captain and Assistant Surgeon, is granted leave of absence for one month.

Byrne, Charles B., Major and Surgeon. The leave of absence granted him is extended three months.

Ewen, Clarence, Major and Surgeon, upon being relieved from duty at Fort Bliss, Texas, will proceed to San Francisco, Cal., and report to the president of the Retiring Board for examination.

Pilcher, James E., Captain and Assistant Surgeon. The extension of leave of absence granted him on surgeon's certificate of disability is still further extended two months on account of sickness.

Rafferty, Ogden, Captain and Assistant Surgeon, is relieved from duty at Benicia Barracks, California, and ordered to Fort Bliss, Texas, for duty, relieving Ewen, Clarence, Major and Surgeon.

Banister, William B., Captain and Assistant Surgeon, is granted leave of absence for one month, to take effect on or about November 10, 1895, with permission to apply for an extension of one month.

Kennedy, James M., First Lieutenant and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of two months.

Ireland, Merritte W., First Lieutenant and Assistant Surgeon, will proceed from Fort Stanton, New Mexico, upon the abandonment of that post, to Benicia Barracks, California, and report for duty at that station.

Promotions.

Corbusier, William H., Captain and Assistant Surgeon, to be Surgeon with the rank of Major, October 17, 1895.

Retirement.

Cronkhite, Henry M., Major and Surgeon, October 17, 1895.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending November 2, 1895:*

Bogert, E. S., Medical Director. Detached from duty at the Naval Hospital at New York on November 1st, and ordered in attendance on officers of the navy in that city.

Heneberger, L., Surgeon. Ordered to duty in attendance on naval officers in New York.

Penrose, T. N., Medical Inspector. Ordered to duty on November 1st in charge of the Naval Hospital at New York, in addition to his present duty.

Person, R. C., Surgeon. Detached from the U. S. Steamer Minnesota and ordered to special duty in connection with the improvements of the Naval Hospital at New York.

Beardsley, G. S., Medical Director. Ordered to duty as a member of the Naval Examining and Retiring Board.

Decker, C. J., Passed Assistant Surgeon. Detached from the Marine Rendezvous and special duty in San Francisco and ordered to Naval Hospital at Mare Island.

Lowndes, C. H. T., Passed Assistant Surgeon. Detached from the Naval Hospital at Mare Island and ordered to the Marine Rendezvous, San Francisco, and in attendance upon officers in that city.

Rosenblueth, J. C., is appointed Assistant Surgeon in the Navy, October 14, 1895.

Sayre, J. S., Passed Assistant Surgeon. Ordered to treatment in the Philadelphia Naval Hospital.

Wales, P. S., Medical Director. Ordered to duty as a member of the Naval Examining and Retiring Board.

Rosenblueth, J. C., Assistant Surgeon. Ordered to instruction at the Naval Laboratory.

Bradley, G. P., Surgeon. Ordered to hold himself in readiness for service on the U. S. Steamer Indiana.

Cordeiro, F. J. B., Passed Assistant Surgeon. Ordered to the U. S. Training-ship Constellation.

Crawford, M. H., Surgeon. Ordered to the U. S. Steamer Boston.

Page, J. E., Passed Assistant Surgeon. Ordered to the U. S. Steamer Boston.

Stone, E. P., Passed Assistant Surgeon. Ordered to hold himself in readiness for service on the U. S. Steamer Indiana.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Sixteen days ending October 31, 1895:*

Purviance, George, Surgeon. Granted leave of absence for twenty-five days. October 23, 1895.

Hutton, W. H. H., Surgeon. Granted leave of absence for twenty days. October 19, 1895.

Guiteras, G. M., Passed Assistant Surgeon. Granted leave of absence for thirty days. October 18, 1895.

Young, G. B., Passed Assistant Surgeon. Relieved from duty in laboratory of bureau, and directed to rejoin his station at Key West, Fla.

Sprague, E. K., Assistant Surgeon. To proceed from Key West, Fla., to Key West Quarantine Station, for temporary duty. October 16, 1895.

Prochazka, Emil, Assistant Surgeon. To proceed from Cairo, Ill., to Detroit, Mich., for duty. October 31, 1895.

Society Meetings for the Coming Week:

Monday, *November 11th:* New York Academy of Medicine (Section in General Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Technology and Chemistry); Lenox Medical and Surgical Society, New York (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Maine Academy of Medicine; Burlington, Vt., Medical and Surgical Club (annual); Norwalk, Conn., Medical Society (private).

Tuesday, *November 12th:* Southern Surgical and Gynæcological Association (first day, Washington); New York State Association of Railway Surgeons (New York); New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Kings County, N. Y., Medical Association; Medical Society of the County of Rensselaer; Newark, N. J. (private), and Trenton, N. J., Medical Associations; Camden, N. J., County Medical Society (semi-annual—Camden); Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Norfolk, Mass., District Medical Society (Hyde Park); Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Ky.

Wednesday, *November 13th:* Southern Surgical and Gynæcological Association (second day); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Societies of the Counties of Albany and Allegany (quarterly), N. Y.; Pittsfield, Mass., Medical Association (private); Worcester, Mass., District Medical Society (Worcester); Philadelphia County Medical Society.

Thursday, *November 14th:* Southern Surgical and Gynæcological Association (third day); Medical Association of Oklahoma Territory (Oklahoma City); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; New York Physicians' Mutual Aid Association (annual—New York); Medical Society of the County of Cayuga, N. Y.; Pathological Society of Philadelphia.

Friday, *November 15th:* New York Academy of Medicine (Section in Orthopædic Surgery); Baltimore Clinical Society; Chicago Gynæcological Society; Brooklyn Medical Society.

Saturday, *November 16th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Births, Marriages, and Deaths.

Married.

Bowen—Moe.—In Little Meadows, Pa., on Wednesday, October 16th, Dr. David Ralph Bowen and Miss Mary A. Moe.

Cormier—Warfield.—In Rochester, N. Y., on Wednesday, October 30th, Dr. Arthur J. Cormier and Miss Maude Warfield.

Fritz—Weatherston.—In Beverly, Ont., on Tuesday, November 5th, Dr. William C. Fritz, of Buffalo, N. Y., and Miss Christine Weatherston, of Beverly.

Kane—Tuttle.—In Buffalo, on Wednesday, October 30th, Dr. Joseph J. Kane and Miss Emily Tuttle.

Malone—Moses.—In Mobile, Ala., on Thursday, October 31st, Mr. Thomas Lewis Malone and Miss Ella Anderson Moses, daughter of Dr. Gratz A. Moses.

Sage—Ward.—In Albany, on Thursday, October 31st, Mr. Henry Manning Sage and Miss Annie Wheeler, daughter of Dr. Samuel B. Ward, of Albany.

Died.

Adams.—In Colorado Springs, Col., on Monday, October 28th, Dr. B. F. D. Adams, in the fifty-sixth year of his age.

Albee.—In Rockland, Me., on Saturday, November 2d, Dr. W. A. Albee.

Cushing.—In Dorchester, Mass., on Wednesday, October 16th, Dr. Benjamin Cushing, aged seventy-three years.

Higgins.—In Waterford, N. Y., on Thursday, October 31st, Mrs. Elizabeth Holroyd, wife of Dr. John Higgins.

Townsend.—In Albany, on Thursday, October 31st, Dr. Franklin Townsend, aged forty-one years.

Letters to the Editor.

THE ABUSE OF MEDICAL CHARITY.

Presbyterian Hospital, Outdoor Department,
New York, *November 5, 1895.*

To the Editor of the New York Medical Journal:

Sir: Our medical journals and newspapers are so full of the discussion of the "dispensary evil," "how to reform the dispensary abuse," "the limits of the physician's duty to the dependent classes," etc., that really one begins to think that there is naught but evil in dispensaries, and that their claims upon the respect and charity of the public are slight and should receive but little attention. It is so much the fashion to speak sneeringly and slightingly of these institutions as a class that the people of the city come to have a very slight idea of the vast amount of good that is being done by them every day, and not to realize that to a large section of the community their steady operation means all the difference not only between comfort and discomfort, but between continuing disease or recovering health.

But it is not this function of these institutions that I would chiefly speak of, but especially of their efforts to extend their aid to the needy and necessitous. It has become the fashion in certain quarters to make loud periodical outcries against the evil wrought by dispensaries. They are accused of treating patients without discrimination, the rich as well as the poor. It is true that there is some ground for these accusations in certain quarters, but it is as unfair to make these accusations of the whole class of dispensaries as it is to make any wholesale and sweeping statements without examination. There is always a little truth at least bound up in error, and there has been a great degree of careless supervision of those who seek treatment at the free dispensary.

It has been fashionable for several years past that flings and sarcastic remarks should be made at the expense of a certain dispensary of this city. It has been called "the rich man's relief," "retreat for domestics in temporary affliction," etc., the idea being that, since it was located in a more or less fashionable section of the city, although within easy reach of a large population of the deserving poor, its *clientèle* was made up exclusively of the residents of the houses in its immediate neighborhood. Now, it seems but just that, this statement being widely spread, the gauge should be accepted and a description given of the methods made use of to exclude the unworthy in the Dispensary of the Presbyterian Hospital of this city.

On his admission, every patient is questioned as to his or her circumstances. If the wage earner of the family is in receipt of more than fifteen dollars a week, and there are fewer than three in the family, the applicant is excluded. Single men receiving ten or twelve dollars a week are excluded in simple and ordinary cases.

There is, of course, large opportunity for deception, and many are undoubtedly treated who do not deserve it. To secure ourselves as far as possible against this, all suspected cases are referred to the Charity Organization Society, and are rejected upon their unfavorable report. Their visitors call upon these patients at the addresses given by them, and, if their surroundings at home are out of harmony with their statements and can not otherwise be explained, they are rejected. A book is kept in which a list of all cases referred to the society for report is entered, and in it is recorded a report of the result of their findings. In spite of all our care, we know that a certain percentage of unworthy persons are treated, but that any large proportion is so treated we do not believe; further, we think that while not absolutely successful in solving the question of treating the needy and the needy only in this city, we are doing what we can to reach that object. Further, it seems to us that, while there will always be a certain element of personal interest in the treatment of the poor in the dispensaries of the city where the medical profession are concerned, and while we would be second to none in acknowledging its noble and self-sacrificing work in this connection, we must at the same time call attention to the fact that we are doing what we can to decrease the dispensary evil by excluding the unworthy and the impostor from our doors.

Halsey L. Wood, M. D.

Proceedings of Societies.

AMERICAN ORTHOPÆDIC ASSOCIATION.

Ninth Annual Meeting, held in Chicago on Tuesday, Wednesday, and Thursday, September 17, 18, and 19, 1895.

The President, Dr. John Ridlon, of Chicago, in the Chair.

(*Concluded from page 408.*)

A Spine Brace.—Dr. A. E. Hoadley, of Chicago, exhibited and described a new spine brace designed by him for the mechanical support of the middle region of the spine. Its greatest utility was in the support which it afforded to the spinal column between the middle of the lumbar and the middle of the dorsal regions, although its usefulness was not strictly confined to these limits. Inasmuch as the greater number of diseases of the spinal column requiring mechanical fixation occurred within this region, its usefulness would be comparatively very great if it was found to be efficient. In its simplest form the brace consisted of a steel frame, a rigid chest pad, and two aprons. The chest pad was adjusted in contour to fit the upper anterior portion of the chest. The length of the pad was about three times its width and it was adjusted transversely, resting immediately below the sterno-clavicular articulations. Its real length transversely should be as great as was practicable without being interfered with by the action of the pectoral muscles in the movement of the shoulder. It should be made of sheet metal, hammered to give shape and rigidity, covered and lightly padded.

A Report of Four Cases of Spondylitis of the Second Cervical Vertebra.—A paper on this subject was read by Dr. Reginald H. Sayre, of New York. Three years before he had brought before the association some cases of spondylitis of the second cervical vertebra, and as it happened, within a few months' time four cases had come under his observation which had presented almost identical lesions, accompanied by very similar deformities. The patients had now been without apparatus to support the head for a number of months. In all of them there had been noted a small swelling at the back of the neck, at the level of the first or second cervical vertebra, which in each instance had happened to be on the right side of the neck. In each case the chin had been directed toward the right side of the body, the right sterno-cleido-mastoid muscle had been rigid, the face had looked downward, and the left ear had been brought much nearer the corresponding shoulder than its fellow. In one instance the face had been deflected so far from the vertical as to be almost parallel with the floor, and had pressed so closely against the clavicle as to cause an excoriation. The position of the head had been in marked contrast to that observed in patients with torticollis due to contraction of the right sterno-cleido-mastoid muscle. Motions of the head in any direction had been excessively painful, and the patients had supported their heads with their hands almost incessantly. In their turning to view any object the entire body had been moved as a solid mass without any rotation of the head. The jaw had been opened with great difficulty in all cases. At the present time, all but one patient could open the mouth freely, and this patient had much more control of the mouth than formerly, and was enabled to swallow with much more ease. In all the cases the chin had been so much depressed as to make swallowing difficult. These patients had been treated by means of a support which had consisted of a pelvic belt with two upright back-bars passing upward over the shoulders and held in position by shoulder straps and an apron. From this an extension rod passed from between the shoulders to the base of the skull, where it joined a rolled-metal band passing around the head and secured in position by a forehead strap and a strap passing under the jaw from ear to ear. Universal joints at the back of the neck and between the shoulder blades allowed of the adjustment of this apparatus to any position of the head, while the distance between the head and body pieces was regulated by a ratchet-and-key extension. Three patients at the present time seemed practically well, and since the removal of the support the range of motion of the neck had increased in all directions, and there had been no return of pain.

The Anterior Forms and Burrowings of Lumbar Abscesses.—Dr. A. M. Phelps, of New York, followed with some remarks on this subject.

A Combination Traction and Immobilization Hip-joint Brace was described by Dr. S. L. McCurdy, of Pittsburgh. He said that protection was afforded a diseased joint by confining the patient either in bed or in some portable appliance or brace that served the same purpose. Immobilization was afforded by the use of plaster of Paris, Bauer's cuirass, Phelps's portable bed, or those of Bradford and Lovett, or a Thomas hip splint. Traction was of the utmost importance during the early stage, to overcome muscular spasm, and secondly intra-articular pressure, and ultimately to relieve pain, and during the stage of dissolution of bone to prevent shortening and angular deformity. In order, then, to apply traction as well as immobilization to the hip joint in disease, the author had devised a combination of the long traction hip splint and the Thomas splint.

A New Surgical Saw.—Dr. John D. Skeer, of Chicago, exhibited a new surgical saw, and made some remarks relative to its use. He said that where there was non-union of the bones after excision of the knee joint, we had conditions that might give rise to any degree of deformity. Any procedure that would prevent the rotation and backward displacement of the tibia, without the interposition of any foreign body between the cut surfaces of the bones, would contribute to the success of the operation. If the tibia was cut off slightly concave and the femur correspondingly convex, the bones would lock together in such a way as to prevent rotation and the backward displacement of the tibia. This method of joining the bones together had first been practised by Dr. Fenwick, of Montreal, in 1868, and it had been published in the *International Encyclopædia of Surgery.* He had used a fret-work saw adapted to a Butcher's frame, and stated that the bones should be accurately adjusted, and if they did not fit nicely a thin slice should be sawed from either or both of the bones, and, if necessary, thin slices removed with the cartilage knife.

Objection had been made, said Dr. Skeer, to Fenwick's operation, for the reason that pockets had been found between the ends of the bones in which pus had accumulated and had prevented union. He thought that the pockets and irregular open spaces had been made with the narrow saw and the cartilage knife at the time of the operation.

He proposed to improve this operation by making the sections with a concavo-convex saw which he had devised for that purpose, and which cut a true circle, so that when the cut surfaces of the bones were brought together they would fit with mathematical accuracy. The saw blade was nine inches long and two inches broad, curved on the flat, with a concavity of a fourth of an inch.

Excision of the Knee as an Orthopædic Procedure.—Dr. W. O. Plimpton, of New York, read a paper with this title. The operation, he said, was no longer an experiment, when performed under right conditions and by a skillful operator, and should save not only limbs but lives. Too much could not be said in favor of early treatment by mechanical and fixation methods in disease of the knee joint. If the profession at large recognized disease of this joint in its incipiency and employed extension and fixation methods of treatment, comparatively few cases would advance so far as to require excision. It was the duty of the orthopædic surgeon who taught to lay special stress upon the early recognition, as well as early mechanical treatment, of these diseases. When the fixation and extension plan of treatment had been conscientiously tried and had not arrested the disease, which was manifestly on the increase, the surgeon should explore the joint and do whatever the conditions demanded, whether washing out or excising. When the articular surfaces were destroyed, and the bone and the soft parts extensively involved, the joint should be excised.

In the series of excisions which the author reported, there had been several examples of great destruction from osteomyelitis and tubercular disease in which amputation had been avoided and several inches saved to the length of the limb by allowing the cavity to fill and the clot to organize. In one case of osteo-myelitis seven inches of bone had been reproduced. In determining what operation for excision of the knee best served the requirements, it might be said that that method which allowed of the most complete removal of all diseased tissue and afforded perfect drainage, retained the parts in best apposition and fixed the bones without the use of pins or wire, and last, but not least, the one that could be done with the greatest ease and rapidity, was to be preferred. Fenwick's operation fulfilled all requirements with a few exceptions. Where the head of the femur was destroyed, precluding the section according to Fenwick, Phelps had devised a method to meet this condition by sawing the end of the femur into a wedge shape and the tibia into a V shape for its reception. The length of time taken for excision of the knee was an important element with regard to the mortality of the operation, as the shock of excision of the knee must of necessity be profound. The author said that Dr. Phelps, on an average, did not consume more than fourteen minutes and a half in excisions of the knee, except in unusually bad cases. He had seen him do an excision in ten minutes from the time the first incision had been made until the last plaster bandage had been put in place.

Dr. A. J. Steele, of St. Louis, exhibited an apparatus for the treatment of clubfoot, and two contrivances to be used in head traction and in hip traction.

Mechanical Support in the Treatment of Scoliosis.—Dr. Louis A. Weigel, of Rochester, read a paper thus entitled. The author first dwelt upon the various theories as to the ætiology and pathology of the affection, the various objections to supports, etc. When a bony distortion of slight degree had taken place, we could easily understand that the superincumbent weight, falling upon an inclined plane, must of necessity increase the deformity, and any plan of treatment which would tend to relieve the spine of this adverse factor was certainly a rational one. The author believed (and said he was in a position to prove) that mechanical support might be continued for an indefinite length of time without producing atrophy, and that in spite of an appliance exceedingly good muscular development might be secured. If this could be shown, the principal objections against appliances would be done away with. The author believed that a mechanical appliance could be used with as much benefit on the back as on the legs, and be made to do its work and be worn as comfortably.

Book Notices.

A Guide to Systematic Readings in the Encyclopædia Britannica. By James Baldwin, Ph. D. Chicago and New York: The Werner Company, 1895. Pp. 9–11 to 316.

This might well be denominated a supplement to the index of the *Encyclopædia.* It can hardly fail to be of use to any one wishing to look up any special subject. It does away in a great measure with the difficulty in finding under what headings any particular subject is mentioned, and it is reasonably complete. The worst that can be said about it is that rather too much space is wasted upon the introductions to the chapters and in disquisitions upon the subjects to which the references are given. On the whole it is a very satisfactory book.

BOOKS, ETC., RECEIVED.

Functional and Organic Diseases of the Stomach. By Sidney Martin, M. D., F. R. S., F. R. C. P., Assistant Physician and Assistant Professor of Clinical Medicine at University College Hospital, etc. With Fifty-seven Illustrations. Edinburgh and London: Young J. Pentland. Philadelphia: J. B. Lippincott Company, 1895. Pp. xiii–505.

A Manual of Operative Surgery. By Lewis A. Stimson, B. A., M. D., Surgeon to the New York, Bellevue, and Hudson Street Hospitals, etc., and John Rogers, Jr., B. A., M. D., Assistant Demonstrator of Anatomy in the College of Physicians and Surgeons, New York, etc. Third Edition. With Three Hundred and Thirty-four Illustrations. Philadelphia: Lea Brothers & Co., 1895. Pp. xii–13 to 598. [Price, $3.75.]

Text-book of Forensic Medicine and Toxicology. By Arthur P. Luff, M. D., B. Sc. Lond., Lecturer on Medical Jurisprudence and Toxicology in St. Mary's Hospital, etc. London and New York: Longmans, Green, & Co., 1895. Vol. I, pp. xii–416. Vol. II, pp. viii–360. [Price, $7.50.]

Pioneer Work in Opening the Medical Profession to Women. Autobiographical Sketches by Dr. Elizabeth Blackwell. London and New York: Longmans, Green, & Co., 1895. Pp. ix–265. [Price, $1.50.]

Diet in Sickness and in Health. By Mrs. Ernest Hart, formerly Student of the Faculty of Medicine of Paris, etc. With an Introduction by Sir Henry Thompson, F. R. C. S., M. B., London. London: The Scientific Press, 1895. Pp. xii–219. [Price, 3*s.* 6*d.*]

De la stérilité chez la femme. Par le Dr. Auvard, professeur adjoint de la Maternité, etc. Avec 106 figures dans le texte. Paris: L. Battaille & Cie., 1896. Pp. xiii–313. [Prix, 5 *fr.*]

Lehrbuch der physiologischen Chemie mit Berücksichtigung der pathologischen Verhältnisse. Für Studirende und Aerzte. Von Richard Neumeister, Dr. med. et phil., Professor an der Universität Jena. Zweiter Teil. Die tierischen Gewebe und Flussigkeiten. Jena: Gustav Fischer, 1895. Pp. x–420. [Preis, Mark 8.50.]

Transactions of the Colorado State Medical Society. Twenty-fifth Annual Convention, Denver, June, 1895.

Transactions of the State Medical Society of Wisconsin. For the Year 1895.

Miscellany.

The Late Dr. Benjamin F. Westbrook.—Under the heading of The Manhood of Dr. B. F. Westbrook, Dr. Pierre Poillion says, in the November number of the *Brooklyn Medical Journal:*

What do we remember of the man when the mortal falls off, like a shell, if not the spiritual sensibilities which we call mind and soul, and which create habits and tempers, forming character? On that Easter afternoon, when tender hands carried Dr. Westbrook down the steps his feet would never more tread, it was the skillful physician whose loss was deplored by the many, but I thought only of his high ideal of manhood, revealed in bits of talk through long years of intimacy, and how nobly he "proved his truth by his endeavor."

How sacred now are those half hours of metaphysics, those talks of the higher energies of mentality, those discussions through clouds of tobacco smoke on the phenomena of the will which compels the whole mechanism of the body to revolve around it, and of all the artificial and genuine conditions of life which humanity struggles with.

We admired Dr. Westbrook's skill, which attained to almost genius, but we loved him for his loyal, sympathizing heart, and in all the economy of human nature we bestow upon the heart the highest value. All who were weary or oppressed, he considered suitable objects for the play of his sympathies; even the pardon for a criminal was watched for most anxiously by his tender heart. I remember one stormy day as he turned from the door after listening to a story of misery he was powerless to relieve; he said: "I would rather walk ten miles to-night than to have heard that story of sorrow that I can not help"; and when a poor woman sent to him for her bill, he replied: "I never send a bill to a woman who works as hard as you do for a living."

He was loyal to his friends and generous to his foes—his regard was absolutely to be relied upon. Nothing could justify to his mind a vacillating friendship. "Why," he said, "if I should not see my friend in twenty years, should I not meet him in precisely the same manner with which we parted, for what has time to do with affinity?" And if some one whom he had taken into his heart disappointed him, it was almost impossible for Dr. Westbrook to unlearn his interest, although the object had proved unworthy—as he said: "I can not forget ever that we were once friends." I remember the character of a soldier was being condemned in his presence, when in a quiet, decisive manner, he said: "That man gave his life for his country, let that fact be his atonement."

No knight of Arthur's table was more chivalrous to women. The weaknesses of this the better part of humanity he would never dwell upon, and, as all physicians know, there are times when a woman needs to be spoken to firmly, if not sternly, but this Dr. Westbrook could not do. "So great," he said, "is my veneration for womanhood, I can not chide them, even if I know they deserve it."

All the disorganized elements of our emotional nature, the jealousies, the emulations, the desire for success, were subordinate in him to the simple, sweet lovingness, which pervaded his individual consciousness, making his heart beat only in those throbs of good-will which helped his fellow-man.

He abhorred the pride and ostentation of moneyed success. Once when a friend whose accumulations had been remarkable called upon him, he said: "I congratulated him, but I deplored the proud look and the high stomach which completely spoil his otherwise superior character, but that savors of the parvenu." And after the exit of a Scandinavian sailor, he turned to me and remarked: "That man I respect, for although he does not appear polished, he is in heart and soul a nobleman"; and when he saw one day a junior making a distinction between the rich and poor in his office, Dr. Westbrook gave him a lecture upon considering class in his ministrations, instead of thinking of all as simply patients whom he could relieve.

Dr. Westbrook's life was absorbingly, if not entirely, devoted to the pursuit of higher knowledge. His conception of the profession of medicine was greater than of the man of three score and ten, for it worked with and for the divine afflatus which we call life and which antedates the existence of man. In the futurity of natural laws Dr. Westbrook saw visions of marvelous results in the closer communion, as his profession soared higher into the principles of life and deeper down into its bases. His was not a lazy talent; perseverance and an intense thirst for more light urged him on until difficulties vanished and he found it easy to excel. The events of every day came to him in the stillness of the night to be considered and developed into seed for future harvest. An architect, after a weary waiting, said as he entered the inner office: "Dr. Westbrook, does it not take you an unusually long time to treat your patients?" Dr. Westbrook replied: "When you design a building of any sort, it takes you some time to form new plans, and I treat every one that comes in here individually. I watch every motion and study every symptom, until I have learned the structure perfectly; then I form my plans to repair the weak places and to rebuild upon the old foundation, and this takes time."

He would frequently express his convictions that a physician should be mentally symmetrical, not developed only in *one* line of thought, but in touch with progressive tendencies and familiar with all schools of literature. Gray's Elegy was his favorite poem, although he had not what is called the poetic temperament. The sheen of the dancing waves and the purple of the aster field were far less attractive to him than the fissured rock and the ruptured mountain side, for in them his analytical, incisive mind reveled in the storehouse of geology. Nor were the most glorious sunsets as beautiful to his vision as the color in the clouds and in our lips touched by iron's marvelous brush.

We say, "A man of ability fills a large place in society," but if such a man lives only for his own interest, at his departure the waters of oblivion soon close over him; but in a profession pre-eminent for competition he set the example of a generous, continuous giving of his own acquirements, which he had earned by faithful and laborious effort. No one ever came to Dr. Westbrook for advice without receiving a most cordial welcome, and without departing with a clear insight into obscure truths, which he could utilize with practical results, and if he differed in essentials his gentle consideration for the views and opinions of his opponent made his firmness tender and persuasive, but he was never politic, the very idea of concession for personal importance was foreign to his nature.

Dr. Westbrook dealt justly, he loved mercy, and we may believe he walked humbly with his God without knowing it. He did not realize that the veneration he felt for the dignity and purity of womanhood was the result of the influence of the religious convictions of his youth. He lived a Christian life in deed if not in word, for "he did not draw the iridescent film of an intellectual culture over the deep stagnation of moral degradation." He was an honest doubter, for he believed in the instinct of his own soul that there was a life supernatural and eternal, but because his mind could not find a logical reason for this belief he could not pretend a faith in any creed. Now he "sees face to face where here he saw through a glass darkly." So we leave him to God his Maker, whose infinite love pities our infirmities, and who can distinguish between willful denial and mental blindness.

Argon and Helium.—In an article entitled The History of Argon and Helium, published in the November number of the *American Journal of Pharmacy*, Dr. Alfred R. L. Dohme says:

The density of argon made by the Cavendish oxygen method was found to be 19·70, H_2, or the hydrogen molecule, being taken as 1; while that of argon made by means of magnesium was found to be 19·90. The spectrum in wave lengths is:

Blue line,	wave length	487·91	Strong.
“ “	“ “	476·50	Fairly strong, characteristic triplet of lines.
“ “	“ “	473·53	
“ “	“ “	472·56	
Red line,	“ “	696·56	Strong.
“ “	“ “	705·64	“
Yellow line,	“ “	603·84	Strong.
Green line,	“ “	561·00	“
And four other green lines.			
Blue-violet line,	wave length	470·20	“
Violet line,	“ “	420·00	“
And five other violet lines, all strong.			

Professor Crookes, who is studying the spectrum of argon, has concluded that this gas possesses, most likely, two spectra, which he thinks he can separate. This would indicate that argon is a mixture of two gases. Argon is about two and a half times as soluble in water as nitrogen, and possesses approximately the same solubility in water as oxygen. We hence find, as we would expect as a result of these determinations, that rain water contains more argon than nitrogen.

Professor Olszewski, of Cracow, has liquefied argon, and also solidified it by the combined action of extremely high pressure and low temperature upon it. He obtained it in white crystals which melt at −189·6° C. Its critical temperature is −121° C., and its boiling point is −187° C., both of which are lower than the respective constants of oxygen.

By determining the velocity of sound in a gas we can determine the ratio of the specific heat at constant pressure to that at constant volume. In the case of argon, this ratio was found to be 1·66, which is proper for a gas in which all the energy is translational—*i. e.*, to a gas that is monatomic in its condition. The only other such known gas is that of mercury at high temperatures.

All attempts to induce argon to combine with other elements have proved abortive, and the gas has well earned its name of “no energy” from the Greek words α and ἔργον, contracted into ἄργον. The amount of argon in the air is, approximately, one per cent.

From Avogadro's law we know that the density of a gas is half of its molecular weight; and as the density of argon is, approximately, 20, its molecular weight must be 40. But its molecule is identical with its atom; hence, its atomic weight is 40, if it be an element, or the mean of the atomic weights of the gases constituting argon, if argon is a mixture of gases. The spectrum work of Professor Crookes argues that argon is a mixture of gases, while Professor Olszewski's work, showing that it has a definite melting point, a definite boiling point, and a definite critical temperature and pressure, and that on compressing it in the presence of its liquid the pressure remains constant until all gas has condensed to liquid, strongly indicates, if it does not prove, that argon is an element. Further work alone can prove which view is correct.

In April, 1895, Professor Ramsay was studying the nature of gases obtained by heating minerals, his object, no doubt, being to obtain argon in this way. From some minerals he did obtain argon, but from many of them he obtained a very light, colorless gas that was lighter than argon and gave a different spectrum, and in particular gave a brilliant D_3 line in the yellow, which line had been noticed in the solar spectrum, but had never been obtained from an element on the earth. He named this gas helium, from ἥλιος, the Greek name for the sun. The D_3 yellow line had been observed thirty years before by Lockyer and Frankland, who supposed it to be that of a hypothetical element, which they named helium. Signor Palmieri, in Italy, some years since, obtained a soft substance from some ejected lava of Mount Vesuvius that gave a yellow spectral line 587·5, the same as the D_3 line, but he gives no details. Dr. Hillebrand, of Washington, D. C., studied some years since the gases occluded by minerals, in particular uraninites of various localities, but found only nitrogen, as the spectrum of the gas obtained was that of nitrogen, and he obtained nitric oxide on sparking it with oxygen. He sent some of the uraninite to Professor Ramsay, who found that it did contain ten per cent. of nitrogen, but also helium. The nitrogen masked the helium spectrum considerably, and, as Professor Ramsay says, it is likely that if Dr. Hillebrand had been working with clèveite he would have discovered helium. To extract the helium, five grammes of coarsely powdered mineral are heated in a glass bulb (made of hard glass) which has been exhausted by means of a Töpler pump. Thus are obtained CO_2, H, N, H_2O, and helium. Many rare minerals were examined, and the following yielded more or less helium in the order of their mention: Monazite, clèveite, bröggerite, pitchbende, xenotrim, orangeite, samarskite, yttrotantalite, hjelmite, fergusonite, tantalite, polycrase, etc. Professor Ramsay used mainly clèveite and bröggerite, because they were most available. Helium must be mechanically held by the minerals, since any of them, when heated and allowed to cool in helium, do not take up any of the latter. The impurities of the resulting gas were removed as follows: CO_2 by potassium hydroxide; water vapor by phosphorus pentoxide; hydrogen by sparking with an excess of oxygen, removing the excess of the latter by means of pyrogallic acid. The nitrogen was removed by repeatedly passing the gases over and through red-hot magnesium and its vapor.

The density of helium as the mean of five determinations was found to be 2·13 ($O = 16$). The half wave-length of sound in helium was found to be 101·5 millimetres and in air 36·04 millimetres. By the same calculation as was given under argon above, it was found that helium is a monatomic gas. If the density as compared with H_2 is 2·13, and it is monatomic, then its atomic weight is 4·26. It is very slightly soluble in water, one volume absorbing only 0·0073 volume of the gas. This is the lowest solubility ever recorded. It is insoluble in absolute alcohol and in benzene. Its spectrum is made up of several lines in the red, orange-red, and yellow. Several lines are identical with argon lines; thus two in the red and one in the orange-red, but the bright red line of argon is faint in case of helium, and the bright red line of helium is faint in case of argon. The characteristic D_3 yellow line of helium is a doublet, one line of which is faint and the other very bright, the distance between them being about one fiftieth of that between the D_1 and D_2 lines of the solar spectrum.

An analogy exists between argon and helium. Both are very inert and can not be separated when mixed, on account of their similarity in properties. Their densities and spectra, however, plainly prove their difference. Both are unattacked by oxygen when sparked with it, and both are unattacked by the vapor of magnesium. Both are monatomic and these properties differentiate them from all other elements. A most anomalous property of helium is its refractive index—which is about one tenth that of hydrogen, a lighter gas—a fact which is as unlooked for as it is inexplicable. Why is argon in the air, and helium not there present, but confined to minerals?

Dr. Johnstone Stoney probably gives the correct answer to this question. He shows that, if hydrogen were present in the atmosphere, it would at once leave this planet by virtue of the velocity of its own molecular motion and migrate to a planet possessed of sufficient gravitational attraction, enough mass, to hold it fast. This, he says, accounts for the presence of helium and hydrogen in the chromosphere, and for the absence of an atmosphere and of water vapor on the moon. It would account for the absence of so light a gas as helium in our atmosphere, and for the presence of the helium line in the spectrum of the chromosphere. If an element forms compounds, or is absorbed by solids, it will be found on the earth; hence, we find helium occluded in minerals, while argon, which is so heavy and dense, can be held as such about our planet. Argon occurs in our atmosphere because it is so inert that it does not form any compounds, and nitrogen is there present because it is also inert and rarely enters into combination. Its compounds, too, are mostly decomposed by water, and the excess of nitrogen, hence, is in the air. Oxygen is in the air because there is an excess over what is necessary to oxidize everything on the surface of the earth. If there are gases similar to argon in inertness, and whose density is not less than that of nitrogen, they may, too, be looked for in the air. The density of argon is too high, and can not be accounted for by assuming that it is a mixture of A_2 and A_1. As it clearly does not belong where its atomic weight places it in the periodic system, it must needs be a mixture, although its behavior near its critical temperature indicates that it is an element. There is, of course, no place for helium in the periodic system, as it lies between hydrogen and lithium. But we must not forget that there is no place for hydrogen either, strictly speaking, and it may be that there may be an eighth group series at the beginning of our system, corresponding to the iron, nickel, and cobalt, or the osmium, iridium, and platinum series. If so, a third gas of atomic weight between hydrogen and lithium is yet to be discovered. It has been mentioned that argon and helium have some spectral lines in common. As no lines of any two elements have ever been found to coincide as yet, we are confronted with the possibility that both these gases contain a common ingredient. The density of helium is, however, already so low that it is difficult to imagine that it contains as an admixture anything much denser; for to possess the density it now has, considered as a mixture, the true helium would have to be possessed of a lower density still; in other words, it would have to be lighter still than it now is. On the other hand, an admixture of helium with argon would tend to make the density of pure argon, and also its atomic weight, even heavier than it is. Hence, the supposition that they contain a common constituent is not fraught with much semblance of probability. We know that Professor Ramsay, Lord Rayleigh, and many others are working at this most marvelously complicated array of phenomena presented by argon and helium, and, until more facts are forthcoming, it is useless to speculate what helium and argon are. *Veritas vos liberabit.*

The Treatment of Diphtheria with Diphtheria Antitoxine.—At a recent meeting of the Philadelphia County Medical Society, Dr. Edwin Rosenthal read a paper on this subject, of which the following is the substance: The antitoxic serum was used, he said, as a curative or "immunizing" agent by subcutaneous injection into the tissues of the body. The part chosen by him, and advised by those who had first used it, was in the back between the scapulæ, on one side of the vertebral column. Other parts of the body, such as the loins, the groins, or the sides of the chest, had also been selected. The parts were thoroughly cleansed by means of sublimated cotton or gauze soaked in alcohol, and, after injection, were hermetically sealed with iodoform collodion. For the purpose of making these injections, the author used first a veterinary hypodermic syringe, requiring, however, two injections, as its capacity was but five cubic centimetres. Subsequently, he had used a Koch ten-cubic-centimetre syringe, and at the present time he was using a hypodermic syringe made for this purpose by the Mulford Company the capacity of which was thirteen cubic centimetres.

The amount of antitoxine used, said Dr. Rosenthal, depended upon the time of making the injection, the age and the weight of the individual, and the gravity of the disease; also upon whether it was used for the purpose of "immunization" or of cure. In these methods he had followed Behring's directions as given in his announcements with every bottle of the antitoxine.

In the first two days of the disease, if the case was one of average severity, the author gave an injection equivalent to six hundred antitoxine normals. No matter what might be the strength of the antitoxine, he fixed his dose to suit this equivalent.

If the case was seen on the third day, or if, at the beginning, the infection was such as led him to believe in the necessity of prompt treatment, as in laryngeal cases or where the lymphatics were involved, he immediately injected ten cubic centimetres or the equivalent, one thousand antitoxic normals. If in from six to twelve or even twenty-four hours no change took place, or the symptoms were aggravated, he injected again one thousand antitoxic normals of the serum, and so on until there was an amelioration of the symptoms shown by a decline of pulse rate and temperature and an improvement in the general condition. He had noticed another sign which was manifested from six to twelve hours even before the pulse and fever declined, which showed that he had used sufficient antitoxine, and that was, a blood-red line surrounding the diphtheritic patches in the throat, a line so distinct that it showed the demarcation between the healthy and the infected mucous membrane. When this was visible his experience had taught him to expect a very favorable result. The quantity of antitoxine administered could be increased enormously; as it was harmless, no danger could be apprehended. To what quantity it had been used in one single case statistics would show. His own statistics showed that two thousand antitoxic normals had been sufficient in the most serious cases. Was diphtheria antitoxic serum, he asked, a cure for diphtheria? For diphtheria pure and simple, where there existed no other infection, he was prepared to say yes. Where, however, any other infection existed, manifested by other symptoms, demonstrated by other indications, and proved by bacteriological examination, the treatment must be modified, and, though his success and statistics had been extraordinary, he thought it only proper and truthful to say that this was due to a recognition of the other complications and a prompt and careful specific treatment of the same. It was, therefore, a very rational explanation of the brilliant results which the early use of antitoxine had given. When used before the diphtheria toxines had so invaded the tissues as to destroy them, the antitoxine was a specific. But where the symptoms were such (degenerations of muscles and nerves or toxæmia or septicæmia) that life could not exist, neither this nor any other method of treatment could cure. Supposing diphtheria to be present, said the author, with all the complications that could arise (infection from streptococci, staphylococcus, pneumococcus, etc.), he modified the treatment and pursued the following method:

After injecting the serum, whether the case had been one requiring intubation or not, whatever the variety might be, he had immediately ordered a purgative to rid the alimentary canal of any infectious bacilli. For this purpose he gave calomel, combining it with salol. He gave it hourly, in suitable doses, until characteristic evacuations appeared, when he ceased its administration. At the same time, he administered a judicious amount of stimulants and food. If there was pneumonia, his whole energies were directed to that, or if there was nephritis, the whole treatment was directed toward the kidneys. That this, he said, was the correct method, the recovery in his cases could demonstrate. In one case of pneumonia, in the practice of Dr. Metzler, treatment had mainly been directed to the lung infection, and the result had been a cure. The same incident had been noted in the practice of Dr. H. H. Freund. In a case of tubal nephritis (acute) seen by Dr. Van Gasken (health inspector of the district) no other remedial agents had been employed but those commonly used in such affections. Dr. Rosenthal thought, therefore, that, while antitoxine was a specific in diphtheria, it was not a cure-all, and if reliance was placed on this remedy alone disappointment would be the rule instead of the exception. That diphtheria antitoxic serum had curative virtues, he said, none who understood the clinical manifestations of the disease would deny; still there were many who by word and pen decried its virtues and gave to it credit for nothing, and who even went so far as to ascribe to it downright harm.

That any treatment when begun early was almost sure to be successful in almost all disease, was an aphorism which, he said, would not hold good in diphtheria. As a matter of fact, a prognosis in diphtheria was almost an impossibility. We knew how in an hour cases could become septic, or how in a moment a sufferer from diphtheria might perish. No matter how bright the outlook might be at the beginning or how mild a case might be, no one could predict the end.

Browne, said the author, stated that in hospitals for diphtheria, where it was the rule for nurses who had the least symptom of sore throat to present themselves to the medical superintendent for immediate examination, and where the disease was, therefore, treated at once, a fatal result was almost unknown, and this under the former method of treatment. In the hospital where these observations had been made, forty-two cases of diphtheria had occurred among the staff during the last five years without a fatal result. In his own practice the author "immunized" the nurse, and accomplished the same purpose.

Dr. Rosenthal had prepared a list of questions containing the points upon which the antagonists of antitoxine laid particular stress, and sent them to as many physicians as he had been able, who, he learned, had used the serum, with the purpose of coming to an accurate and truthful conclusion. Besides this, he had sent the same questions to the hospitals of different cities with a chart asking for statistics, etc. While his colleagues in private practice had been both kind and prompt in their responses, he stated that he would be unable to give the statistics of the different hospitals, for the simple reason that, while the question might be of vital interest to us as private practising physicians, a sort of red-tapism protected some of the hospitals from exposing their statistics, even those in which he had really expected some co-operation; a lack of consideration or probably other reasons had prevented such a request being granted.

While these statistics, he said, had not realized his expectation with regard to an extraordinary reduction in the death-rate, they had, however, shown such a reduction as would lead us to suppose that some factor had been at work to produce such a result.

These statistics and cases explained themselves. What conclusions were to be drawn therefrom could easily be given. Clinical evidence was in favor of antitoxine, notwithstanding the unfavorable opinions expressed. For the different monographs upon this subject Dr. Rosenthal stated that he was indebted to his cousin, Dr. A. Baer, of Berlin, who had also furnished him with Behring's antitoxine. He was also under obligations to Dr. Roger S. Tracy, of the New York Board of Health, and Dr. S. H. Durgin, of the Boston Board of Health, for their kindness in furnishing him with statistics, also to Dr. Page, of the Boston City Hospital, South Department.

The author was in favor of the antitoxine treatment of diphtheria; and as an evidence of the correctness of his position he had given the reports of numerous physicians, the reports of three different hospitals, the extended reports of the cities of Boston and New York, and the combined statistics of Heidelberg, Prague, Vienna, Berlin, Munich, Leipsic, Halle, Paris, London, New York, and Boston. Philadelphia had no statistics to present.

The Cracked-pot Sound.—The *Presse médicale* for October 19th contains an abstract of an article by M. Galliard, which was published in the *Médecine moderne* for September 25th. According to the author, the cracked-pot sound has become an almost pathognomonic symptom of the tuberculous cavity of the apex since the year 1819, when it was described by Laënnec. It is known to be produced by deep percussion of the subclavicular region in an emaciated subject with the mouth open, and very probably having a spacious tuberculous cavity which is not dried up. In fact, the antero-superior portion of the thorax, better than any other, transmits to the lungs the concussion produced by the percussing finger, and it is there, moreover, that the cavities are usually situated. Furthermore, if we do not obtain it distinctly except when the patients open their mouths, that proves that there must be, in order to cause it, a propagation of the sonorous waves to the bronchial tubes and to the trachea. The sound is pneumo-broncho-tracheal. In phthisical patients in the third stage the conditions favorable to its production are as follows: 1. It is necessary that the cavities should be spacious without being too large. 2. They should be superficial. 3. Their walls should be slight. 4. They should communicate freely with the bronchial tubes. 5. They should contain a certain quantity of muco-purulent liquid; although it is not necessary that the cavities should contain muco-purulent secretions, it is sufficient if the secretions exist in the bronchial tubes communicating with the pulmonary cavity.

If, says the author, the cracked-pot sound signifies practically a tuberculous cavity, this symptom is met with, nevertheless, in several other affections of the thorax.

In pneumonia, in fact, this sound may be produced, either near the pneumonic centre or near an obstruction. The author also admits with Woillez that the special resonance may manifest itself at a distance, that is, below the clavicle, when the hepatization is situated at the base of the lung.

In pleurisy, says the author, this sound has been carefully described by Notta, and was distinctly mentioned by Landouzy in 1858. The author himself has had occasion to observe it several times. This symptom, he says, exists sometimes with the simple forcing back of the lung, sometimes with its vicarious dilatation, and sometimes where there is liquid or thick false membranes below the clavicle. There, as elsewhere, it can be attributed only to the concussion of the column of air against mucosities of a broncho-tracheal nature. In seven cases the symptom had always shown itself on the left side. There is probably in this, says the author, more than a simple coincidence, and the question is worthy of a thorough examination.

In order to elicit this sound in pneumothorax, it is necessary that the pleura should communicate freely with the bronchial tubes, as is the case in certain examples of partial pneumothorax.

Finally, says M. Galliard, when percussion of the anterior part of the thorax was practised in one case, that of a child suffering with bronchitis, a resonance was obtained which recalled the cracked-pot sound. In adults it is not so easy to produce. This symptom is valuable, he says, in regard to the pathogeny of the sounds of percussion, and should be studied in various affections of the thorax, especially in pleurisy.

The Treatment of Epilepsy by Flechsig's Method.—In the *American Journal of Insanity* for October, Dr. Isabel M. Davenport, of the Illinois Eastern Hospital for the Insane, gives an account of her experience with this treatment in eleven cases in which the results were the same, that is, a cessation of the attacks, but no permanent benefit. Thirty patients of this hospital, says the author, received the Flechsig treatment for epilepsy by opium during the past year. Among the number were two boys aged respectively fourteen and seventeen years, to whom the opium was given in the same quantity and with similar symptoms and results. With the exception of two patients, all have been less irritable and have gained in flesh.

Dr. George Boody, of this hospital, who had twelve cases, reports the case of a man who had a cessation of the seizure for seven months and returned to his home apparently well; but he has been readmitted to the institution, the seizures, which returned, being as violent and frequent as before. Another man who suffered for several years from epilepsy, with severe pain over the vertex, and also from intercostal pain, had no convulsions for three months, and though they returned, he is entirely free from the distressing pain spoken of, and appears to feel that he is well repaid for the treatment.

Several interesting features, says Dr. Davenport, have been noted—namely, the dilatation of the pupils in all the women, with two exceptions, and also the fact that all the female patients, with three exceptions, were free from constipation, and in some cases the bowels were too loose, while the male patients, on the contrary, were very much troubled with constipation, which required large and frequently repeated doses of cathartic medicine, probably because the stronger muscular system of the men was not relaxed by the opium to the same extent as that of the women.

Several melancholiacs received much benefit from the large doses of opium, which exhilarated them and gave a sense of well-being which continued permanently in two cases, though the epilepsy returned.

After a careful and thorough trial, extending over a period of more than a year, Dr. Davenport concludes that:

1. Flechsig's method of treatment for epilepsy does not result in recovery.

2. That it is of benefit in that it gives many of these unfortunates a gratifying respite from the attacks, and thus adds to their comfort.

3. That it is soothing and quieting to the irritable patients and exhilarating to those suffering from depression, thus relieving distressing symptoms in both cases.

4. That through the cessation of the seizures and other annoying symptoms the patient is enabled to enjoy something of life in general and to recuperate physically, and for these reasons she believes it is desirable to repeat it at intervals of two or three months, if thereby the results mentioned above can be obtained.

Dr. Davenport states that she has found no benefit from repeating the treatment oftener than at periods of three months after the bromides have been taken. In every case the seizures became less frequent and the patient less irritable.

Purulent Otitis Media following Posterior Tamponing of the Nasal Fossæ.—The *Presse médicale* for October 12th publishes an abstract of an article which appeared in the *Archivio italiano di otologia*, in which M. Galetti remarks that, although the auricular complications due to posterior tamponing of the nasal fossæ have led to the condemnation of this method of treating epistaxis, certain physicians find it difficult to give it up. The author has recently collected the histories of four cases in which acute otitis media developed on the third or fourth day after posterior tamponing had been practised.

The pathogeny, he says, of this symptom is easily understood. The mucosities and the blood which accumulate between the two tampons, being under conditions of temperature and of humidity favorable to fermentation, rapidly become putrid. The posterior tampon, which strongly presses the point of insertion of the peristaphylinus, provokes reflex movements of deglutition, and the repeated opening of the orifice of the Eustachian tube favors the entrance into it of air impregnated with microbes and of putrid liquids which filter through the tampon.

Epistaxis, he says, is only a symptom which indicates that one or several of the blood-vessels of the nasal mucous membrane are ruptured. The treatment, however, should not differ from that employed in hæmorrhage by rupture of the blood-vessels of a limb. The treatment consists in closing the artery or vein from which the blood comes. In the nose the small blood-vessels must first of all be exposed, and the end of a galvano-cautery conductor applied to them, or, better still, a drop of chromic acid or of nitrate of silver.

If posterior rhinoscopy is not understood, a condom is to be introduced empty into the nasal fossa and afterward filled with air or with an antiseptic liquid. M. Galetti also recommends anterior tamponing, ergotine injections, and irrigations of hot water or, better still, oxygenated water.

The Occurrence of Secondary Rashes in Scarlet Fever.—Dr. A. Griffith, of the Bagthorpe Fever Hospital, Nottingham, contributes a paper on this subject to the October number of the *Quarterly Medical Journal for Yorkshire and Adjoining Counties*, in which he remarks that, among scarlet-fever patients, during convalescence there seems to be a proneness to the return of a scarlatiniform rash when the temperature of the body rises from any cause; thus, he says, it frequently accompanies an acute amygdalitis, or rhinitis, or the onset of acute nephritis, and this even in adult patients, so that the diagnosis of reinfection can not be made from the rash alone, but it is necessary to have other evidence in favor of a scarlatinal origin. When the rash is attended by all the symptoms of scarlet fever, and with no other possible explanation, we encounter a new difficulty in deciding whether the attack is primary or secondary, especially if we have not watched the patient from the beginning of the first illness. The absence of desquamation is not of much help, since, as is generally admitted, there are many cases of scarlet fever in which desquamation does not amount to more than a furfuraceous powdering, and unfortunately, if we wish to reconsider the first diagnosis after the lapse of three or four weeks, we find little else to base our conclusions upon. On the other hand, says the author, if at the end of four weeks we find abundant membranaceous peeling, we are justified in affirming that the first illness, at any rate, was scarlet fever, and we are in a position to consider whether the second is a return of the same.

As far as his experience in the Nottingham Fever Hospital goes, he says, all the patients who have presented a scarlatiniform rash some days or weeks after admission to the wards may be arranged in three groups: 1. Those whose illness presented all the signs of moderate or severe scarlet fever, with a high temperature (103° or more), keeping up at nearly the same height for at least three evenings, and in whom there was no good evidence of a previous attack of that disease. 2. Those in whom the illness resembled scarlet fever in nature, the rash lasting from twenty-four hours to four days, with sore throat and general constitutional disturbance, the rise of temperature being not so great as in group 1, but either high at the beginning, with a steady, gradual fall, or remaining at a lower level (100° or 101°) during the continuance of the rash and falling as the latter faded, and in whom there *was* clear evidence of genuineness of the first attack of scarlet fever. 3. This includes all those who had a rash lasting from twelve to twenty-four hours, in some accompanied by little constitutional disturbance, and a high temperature for a few hours only; in others with the onset of an acute inflammation of throat, kidneys, or other organs; while in other cases the question of a relapse was entertained, the patients presenting some of the symptoms, but in a very mild form. Those in the first group, says Dr. Griffith, have been considered as primary attacks of scarlet fever; the second group are those discussed here as relapses, or second attacks; while the third are omitted as doubtful. Out of about two thousand patients admitted for scarlet fever, there were fourteen who had suffered from what may be considered as second attacks of the fever. In the first four cases there was good desquamation after the primary attack, and the second attack either was typical and severe or was followed by a second abundant desquamation. In the next four cases there was desquamation after the first attack, and the second was mild. In the next three the first attack was mild, and the second more severe, accompanied by good desquamation. In the last three both attacks were mild, and neither was followed by more than a powdering of the skin. If, he says, the evidence for these last is not all that could be wished, it may be noted, at any rate, that they were passed into the fever wards as genuine, and remained there for some weeks; that the later illnesses were mild, and the temperature charts did not resemble the usual type of mild scarlet fever.

We can not draw any inference, says the author, from so few cases as to the most frequent age or as to the interval elapsing before reinfection occurs, the only noteworthy point being that where the interval was short the first attack was of a mild character. There seems, he adds, to be a special liability to nephritis after a second attack, though not ensuing immediately. In one case, in which there had been acute nephritis with the first illness, the albuminuria, which had ceased for a week, again became serious with the second rash.

Three of the patients were discharged within four weeks and three in five weeks after the onset of the second rash, with no ill effects to their friends, so that possibly the duration of infection is less than in a first attack. All were kept until the later desquamation was complete.

It may be thought, says Dr. Griffith, that these cases bear some relationship to the so-called secondary sore throat of scarlet fever. His experience, however, is that the types of illness in the two are quite different. In the latter the throat affection is generally an acute quinsy, and the temperature corresponds to it and falls as it gets better. In the secondary rash cases there *is* a sore throat, but it is only a part of the illness, the temperature corresponding to the rash.

If, he says, this argument is accepted, and these later rashes are to be explained as has been indicated (and the experience of other large isolation hospitals agrees, he thinks, with his), the question arises as to whether the illness is due to self-infection, being properly termed a relapse or recrudescence, or whether it depends on the presence of other patients in the same ward, some of whom may have fever of a more virulent character.

The experience of medical men in private practice should help us, he thinks, as to the occurrence of relapses in scarlet-fever patients nursed singly at home. Meanwhile, it is not difficult to imagine that, in a ward containing twelve or twenty patients, even with two thousand cubic feet of air space each, the amount of infection is very large, the virulence being possibly increased by aggregation as well as by the uniform temperature of about 60° F., or to suppose that those who have had mild attacks from a small dose of poison in the first place, rather than from their insusceptibility, may be insufficiently protected against a larger dose of a more virulent infection.

If this is the correct explanation, says Dr. Griffith, it would point to the inadvisability of aggregating fever cases in large wards, and still more to the fault of the usual plan of placing mild and medium, if not severe, cases in the same wards and in the hands of the same nurses. It is to be hoped that as the experience of isolation hospitals becomes more complete, and the facts gained in them are collected and compared, we may be able to come to some conclusion on a point of such practical importance.

A Female Member of the British Army Medical Staff.—The *Lancet* for October 19th publishes some letters in regard to this remarkable woman, from which we make the following extracts: Lieutenant-Colonel Rogers, of Netley, says: "In 1857 I traveled with this remarkable character on board the intercolonial steamer plying between St. Thomas and Barbadoes, when I occupied the same cabin, I in the top and she in the lower berth—of course, without any suspicion of her sex on my part. I well remember how, in harsh and peevish voice, she ordered me out of the cabin—blow high, blow low—while she dressed in the morning. 'Now, then, youngster, clear out of my cabin while I dress,' she would say. A goat was on board to provide her with milk; she was a strict vegetarian, and she was accompanied by a negro servant and a little dog called Psyche. The doctor was going at the time to visit her old friend and enemy, General Sir Josiah Cleote (commanding troops), with whom, when aid-de-camp to the Governor of the Cape, she had fought a duel and was wounded in the leg. The late Colonel Shadwell Clerke, who was at that period on the General's staff, told me before his death last year that he, too, was challenged for some fancied insult, but that General Cleote pooh-poohed the idea and made them shake hands. Few men knew more about Barry's career than the recently deceased Surgeon-General Sir T. Longmore, C. B., with whom I often corresponded on the subject, and who placed a copy of my novel in the Museum Library of the Victoria Hospital. But many other persons are, I believe, still to the fore who could furnish interesting reminiscences of this eccentric individual—notably General Lowry, C. B., General W. Chamberlayne, General de Montmorenci, Colonel R. Wilson, and Surgeon-

Major-Generals Tippetts and G. Langford Hine; all of them served from time to time with her at various foreign stations. I may add that she always seemed to have immense influence at headquarters and could almost choose her own station. Imperious in manner and officially dictatorial, in social circles she was admired and respected; she was, moreover, sympathetic and skillful in her profession—yet what a life of repressed emotions must hers have been?—a woman, too, who it was said gave birth to a child in her early days."

Miss Janet Carphin, of Edinburgh, writes as follows in regard to Dr. James Barry, as she was always called: "I heard of him (or her) from my old friend Dr. Jobson, who, after spending many years as an army surgeon, finished his career as a physician in Kent. Dr. Jobson died about fifteen years ago, an old man aged about eighty-five years, so it must have been rather early in the century when he was at college in Edinburgh. One of his fellow students was remarkable by the persistency with which he avoided his fellow students, and was also laughed at because, in contradistinction to the shooting-coats which all the other students wore, he invariably appeared in a long surtout. However, although Barry kept the other students at a distance, he soon became friendly with Dr. Jobson and invited him to his lodgings, where he introduced him to his mother, with whom he lived. Both Dr. Jobson and Dr. Barry resolved to go into the army, and were together at a depot where Dr. Jobson was astonished to find that Dr. Barry was afraid to go home by himself through a rather rough part of the town, but asked Dr. Jobson to go with him. Dr. Jobson, who, although a little man, was devoted to athletics, was much disappointed that he could not teach Dr. Barry to box. He never would strike out, but kept his arms over his chest to protect it from blows. Dr. Jobson and Dr. Barry were appointed to different regiments, and they never met again, although Dr. Jobson heard of him occasionally as performing all the duties of an army surgeon, and also of his performing serious operations in the hospital at Malta. When she died and it was discovered that she was a woman and had been a mother, Dr. Jobson was as much astonished as anybody; for, although he remembered the above-mentioned womanly traits, they had never caused him to have the slightest suspicion of her sex."

Dr. H. Laing Gordon, of Edinburgh, says: "Dr. Beck discovered reliable information concerning 'Dr. James Barry,' and read a most interesting paper on the subject to the Cape Town Branch of the British Medical Association, which was published in the *South African Medical Journal* about six months ago. It appears that 'Dr. James Barry' served a useful career in the army medical staff in Cape Colony, the West Indies, and, I think, also St. Helena. Her sex was not known until after death."

Dr. C. F. Moore, of Dublin, writes that the medical officer, so called, traveled in the same steamer with him, and he was much struck with the peculiarities of that officer, who, it has been stated, fought two duels; so it is evident, says Dr. Moore, that want of courage was not one of her weaknesses.

Another correspondent states that there is no doubt as to the existence of James Barry or of her sex. He lived in the same neighborhood and knew her perfectly well by sight, and he states that it was a matter of common repute that she belonged to a different sex than the one indicated by her clothes.

Poisoning Due to Veal.—The *Union médicale* for October 19th publishes an abstract of an article which appeared in the *Archives de médecine et de pharmacie militaires* for June and July, 1895. The authors of this article, M. Darde and M. Viger, gave an account of the symptoms provoked by eating tainted veal, of which they have made a study.

The authors made many observations during three epidemics of veal poisoning and found that, out of two hundred and fourteen patients, a hundred and ninety-eight had eaten unwholesome veal. An investigation of the reports of the epidemic showed that twice the veal consumed had been taken from an animal suffering with a serious disease, and the symptoms had been grave enough to cause the death of several patients. At the autopsies there was found principally a very pronounced submucous vascularization of the stomach and of the small intestine, giving the appearance of ecchymotic patches more or less extensive; a very marked vascularization of the mesentery; and congestion of the kidneys. In another epidemic there had been found ecchymoses of variable extent and erosions of the mucous membrane of the stomach and of the small intestine.

The symptoms had set in in from sixteen to sixty-four hours after the eating of the veal, and the most serious of them had concerned the digestive canal; the tongue was coated and dry; the diarrhœa, which preceded vomiting, was characterized by abundant fæcal matter with a putrid odor, but there were no bloody stools. Colic generally preceded and always accompanied the diarrhœa. The abdomen was sensitive to pressure and retracted. In serious cases the vomiting was uncontrollable, and the face was pinched and choleraic in appearance. The liver and the spleen were normal in size. Epistaxis was observed in two patients. Out of fifty-five thermometric observations, it was found that the temperature had risen above 104° F. three times, and above 102·1° twenty-four times.

The nervous symptoms were delirium, insomnia, amnesia, and headache. Some of the patients had cramps, one had dilatation of the pupils, and several complained of amblyopia. Eight patients had albuminuria, two had hæmaturia, and three had anuria. There were no cutaneous manifestations.

A Hospital Patient Dead and Unknown.—The *Progrès médical* for October 19th publishes the following extract from *Justice* for the 16th of October: On October 10th Mme. L. received information of the death of her little boy at the *hôpital de La Roche-sur-Yon*. She at once proceeded to the hospital, where, passing through one of the rooms, she saw her child seated at a table eating and in comparatively good health. The mother was too happy to enter a complaint. It seems well, however, says the paper, to know upon whom the responsibility of similar blunders rests. Furthermore, although the error was discovered, it was impossible to establish the identity of the dead child.

At a time, still recent, says the writer, when our opponents employed all possible means to combat secularity and slandered the laity, a great outcry was made in regard to a similar occurrence at the *hôpital d'Aubervilliers*. They affirmed that such things were impossible among the nuns.

Several mistakes, says the writer, have been cited, among them one occurring at the *hôpital des enfants malades*, which is in charge of the sisters of *Saint-Thomas-de-Villeneuve*.

The foregoing account, says the writer, concerns the hôpital de la Roche-Guyon—not *sur-Yon*—which is in charge of the nuns.

This is recorded, he says, for the sake of information, which may be of use if circumstances demand it. In any case, he thinks it should teach a lesson to all those connected with hospitals, whose duty it is to conform strictly with the instructions which are given them in regard to the dead.

THE NEW YORK MEDICAL JOURNAL, November 16, 1895.

Original Communications.

HOW TO AMPUTATE.*

By JOHN A. WYETH, M. D.

In every amputation the preservation of the life of the patient is the first great principle to bear in mind; the second is to preserve the greatest amount of usefulness for that part of the member which is left with the body. Since hæmorrhage is the chief factor of shock, to prevent loss of blood is essential. Practically every amputation should be governed by these laws.

When hæmorrhage has not occurred before the case is in the hands of the surgeon, this element of danger may, thanks to modern surgery, be eliminated. There is not an amputation, from the fingers to the shoulder joint or from the toes to the hip joint, in which hæmorrhage can not be eliminated as a factor of danger to the patient's life. And even when extensive bleeding has occurred before amputation is undertaken, the introduction of hot salt solution into an exposed vein, or in a vein at the bend of the elbow, does much to eliminate the great danger of shock from hæmorrhage. Therefore, beyond the saving of blood and of as much of the limb as is possible, I have never practised any fixed rules as to *how* to amputate, even in the formation of flaps. We should make the flap always with a view of saving as much as possible of the limb. With a single exception, I have considered the tarsus and the metatarsus as a single bone, paying no attention to joints, taking only the precaution to remove any thin film of bone or cartilage which might still remain when the saw passes close to one of the articulations. The only exceptions to this rule are (1) in the matter of an amputation at or near the ankle joint. From experience I am convinced a better degree of usefulness can be obtained by a properly adjusted artificial foot to the stump of a Syme's amputation than to one which saves either a portion of the os calcis (Pirogoff), or when part or all of the astragalus is left in (Hancock). From the ankle to the hip the same conservative idea should prevail, unless (2) the line of the saw passes within an inch of the knee joint, or (3) above the trochanters. In these conditions it is conservatism to remove the upper end of the tibia and amputate at the knee joint, and to enucleate the head of the femur. In amputations of the hand the preservation of as much tactile sense, together with as much of the member, as possible should be the rule. This should hold especially in the case of those who use the hand in any vocation. In certain cases of those who do not labor, amputations which sacrifice even more of the member are justifiable. For example, a more shapely hand is often left by the removal of a portion of the metacarpal bone with the finger.

In the effort to prevent loss of blood in an amputation, it may not be always essential to success to force out all the blood that is in the member to be sacrificed. When the quantity of blood is normal, or nearly so, and there has been no hæmorrhage and the patient is in good condition, the sudden crowding of the blood that may be in the limb, such as the lower extremity, into the remaining vessels may put a strain upon the heart that will produce a serious result.

Of the seven hip-joint operations that I have performed by my own method, the only patient I have lost was a young man, about nineteen years of age, with a sarcoma of the knee. Estimating all the blood that ran out of the wound from the leg, he did not lose in all more than five ounces. The pulse was full and bounding after he was put to bed, and it seemed to me that it was one of the most favorable cases I had had. I left the patient in the hands of an assistant and went to the country; the man went into shock about three hours after the operation, and died without ever having reacted. His kidneys were normal; the anæsthetic given was ether, with an Ormsby inhaler, and the quantity was very small. He died, in my opinion, from heart fatigue. The strain on the heart muscle, especially the right side, was too great, and it quit work.

In emptying the member of blood, elevation of the extremity will cause the greater part to gravitate into the vessels of the trunk. In anæmic cases, the application of the Esmarch bandage from the periphery almost to the location of the disease, skipping over this and again applying it above the seat of lesion, will entirely exsanguinate the member, with the exception of a small quantity of blood which may be contained in the diseased portion.

When, as in an amputation at or near the ankle joint, a rubber tourniquet is applied to the thigh, care should be taken to use a wide rubber band and not a rubber tube, since the accumulative pressure of the rubber tubing is sometimes great enough to injure the nerve. I have seen paralysis follow in several instances as a result of traumatic neuritis caused by the tourniquet.

In high amputations, near the shoulder or hip, this objection does not prevail, since pressure on a nerve is immaterial at that point.

In Syme's amputation I have modified the incision, and carry it from the tip of the malleolus on either side directly downward, parallel with the axis of the leg, the foot being held at right angles to the leg. In this way the blood supply to the flap, especially on the inner side, is not interfered with (as demonstrated by myself in 1876), which was often done when the incision was carried obliquely backward, as advised by Gross and other older surgeons. Professor Stephen Smith has pointed out the clinical fact that sloughing of the inner side of the flap occurs in a considerable proportion of cases, and my dissections have demonstrated the fact that the oblique incision divides the posterior tibial at or near its bifurcation, and that the chief blood supply at this part of the flap comes from the external plantar branch of that artery and from the posterior tibial at the bifurcation; and that it is important, therefore, to leave at least a half or three quarters of an inch of the external plantar artery intact. The pocketing of the flap is not objectionable, and can be in great part remedied by making a much shorter anterior flap, the lines of the incision being well above the level of the ankle joint. I have discarded, in general amputations of the leg or arm, any method looking to obtain a long posterior and short anterior flap (Teale), with the idea of bringing the cicatrix away from the end of the stump. I have always held that a circular skin flap, with or without a lateral incision, as the emergency may demand, is the ideal flap, the muscles being divided an inch or more above the level of the circular incision through the skin, and the bone sawed on a level with the muscle. Dissection of the periosteum from the end of the bone in order to secure a periosteal flap is entirely unnecessary and should not be done.

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* Read by invitation before the New York State Association of Railway Surgeons, at the New York Academy of Medicine, November 12, 1895.

In certain cases of amputation, when osteomyelitis has prevailed, it was thought that the surgeon might be called upon to carry his amputation high up, close to the shoulder or hip joint, in order to get above the disease in the bone. This is not good surgery, for the longer the limb, the more useful to the patient, and bones that are the seat of osteomyelitis can be readily cured, provided the canal is opened even near the knee or elbow joint and the bone carefully curetted up to the end of the canal. The insertion of a drainage-tube through which aseptic irrigation is made every day or two, and the gradual withdrawal of the tube, will cure the disease in the bone and leave the stump long and useful. I have in several instances carried out this plan with invariable success.

One other point has been of great service to me in effecting rapid amputation. When making a hip-joint amputation or an amputation through large masses of muscular tissue, after tying large arteries, such as the two femorals and the circumflex branches, in order not to lose time that is usually spent in applying forceps to oozing surfaces, I pass deep catgut sutures through great masses of muscle all the way across the whole cut surface and tie these firmly. In this way the muscles are brought together and compression exercised which prevents bleeding. Ten or fifteen minutes can be saved by this practice in an ordinary amputation. In the last hip-joint amputation I did by the bloodless method, although I made no effort at haste, the operation was done, the vessels were tied, and the disarticulation was completed in twenty-five minutes, the tourniquet still remaining on until the wound was ready to be closed by sutures. In this amputation I now apply the tourniquet higher than at first advised. Experience has taught me that complete control of hæmorrhage can be obtained by carrying the strong white rubber tubing close in the crotch, where it is held by the inner pin, while the other pin is so inserted that the tube passes in the notch just below the anterior superior spine of the ilium, from which the sartorius muscle originates. In this way the pressure is entirely above the level of the hip joint, the capsule can be opened, and disarticulation rapidly effected without any attention to the tourniquet. If the tourniquet is not tightly applied, when the bone is removed and the rubber tubing is slackened by diminished resistance there may be some slight dripping from the vessels in the posterior part of the flap; but this is immaterial and can be immediately controlled by pressure with the fingers and the application of artery forceps.

It is not necessary to emphasize to this society the point that in amputating for malignant disease it is the better surgery to get just as far from the lesion as possible, shaping the flap to meet this object.

A CASE OF
POLYPOID LIPOMA OF THE LARYNX.*

By JOHN W. FARLOW, M. D.,
BOSTON.

In March, 1893, J. W., aged sixty-six years, consulted my colleague, Dr. W. F. Knowles, for a polypus of the throat. His health had always been good. He first noticed trouble in his throat about fifteen years before, and his family physician had removed a piece two inches long about two years before with straight scissors. On bending his head forward and downward and coughing, a polypoid growth appeared, the tip of which could be drawn at least half an inch beyond the lips. When I saw him he was holding the tumor, wrapped in a fold of his handkerchief, with the fingers of his right hand outside the right side of his mouth. The growth had several projections from it and reminded one of branching coral. It almost entirely occluded the orifice of the larynx and seemed to have attachment to the posterior pharyngeal wall just above the right arytænoid. When he let go of the tumor it fell back into the pharynx and one piece dropped down between the vocal cords into the subglottic and tracheal region. This piece was somewhat attenuated and constricted, probably by the action of the vocal cords.

For several months he had been much troubled by shortness of breath, which is very natural, considering how the larynx was filled up.

At the patient's first visit Dr. Knowles attempted the removal of the growth with a cold wire snare, but an accident to the snare forced him to use long, curved scissors to free the wire and he removed two large pieces. The patient's breathing was so much improved that he refused any further treatment until December, 1894, when he again appeared on account of a decided increase in the size of the growth. With the galvano-cautery snare Dr. Knowles removed the rest of the growth in three pieces. The attachment was found to be very low down in the pharynx. Three months later there had been no recurrence. Microscopic examination showed it to be a submucous polypoid lipoma. Dr. Farlow showed the specimens in alcohol and also a photograph, natural size, taken from the fresh specimens.

According to Bosworth, the development of fatty tumors of the larynx is confined, with the single exception of a case reported by Bruns, to cases which, taking their origin in the arytæno-epiglottic region, fall externally into the hyoid fossa, where they sometimes attain considerable size. In a case of Holt's, a man eighty years of age, a pedunculated tumor, which had existed for twelve years, extended into the œsophagus. He died from suffocation, the tumor being expelled from the œsophagus and lodging on the entrance to the larynx. In a case reported by Jones the tumor was round and pedunculated and two inches in diameter. It was enucleated by the natural passages. In a case of Macleod's the tumor was as large as an orange. Lateral pharyngotomy was performed, and the patient died subsequently of hæmorrhage. In Bruns's case there was an intralaryngeal growth in a woman of twenty-five, which was thought to be congenital. It was large and occluded the larynx. The larger part was removed by the galvanocautery in fifteen sittings.

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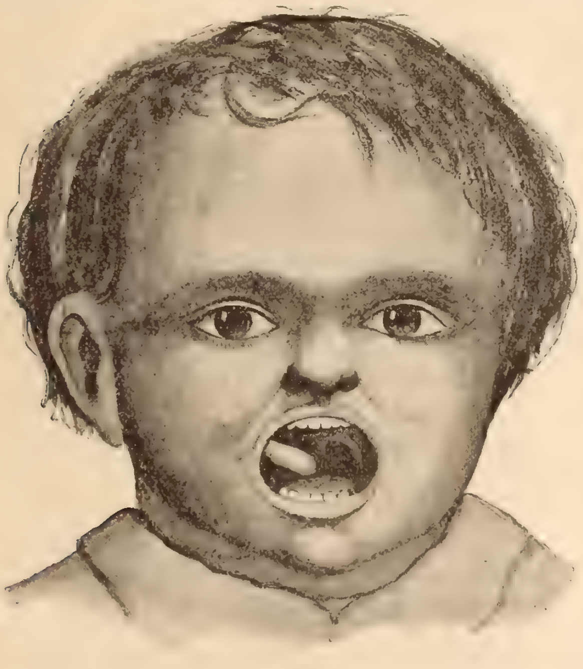
* Read before the American Laryngological Association at its seventeenth annual congress.

Dr. Knowles expects to report the case *in extenso* with illustrations, and through his courtesy I am allowed to show you the specimens from a very uncommon case.

A Case of Polypoid Lipoma of the Inner Side of the Cheek (*John W. Farlow, M. D., Boston*).—A. B., aged two years, was brought to my clinic at the Boston City Hospital. He had always been well and presented a healthy aspect. The previous day the mother had noticed blood in the mouth of the infant, but seems not to have been aware of any growth. On opening the mouth I saw a reddish, lobular body, having its attachment by a narrow pedicle to the inner side of the right cheek just anterior to the opening of Stenson's duct. It was soft, freely movable, not fluctuating or ulcerated, and was a little more than an inch and an eighth in length and half an inch in diameter. It had a glandular look and seemed as if it might be a piece of the parotid gland. I cut it off with a wire snare without hæmorrhage. The bleeding which attracted the mother's attention was probably caused by the child's biting the tumor. Microscopic examination shows it to be a polypoid, submucous lipoma, made up almost entirely of fat cells.

I will not take up your time by quoting and describing similar cases recorded in literature, but merely state that they are very uncommon. When they grow into the mouth and become pedunculated they soon give rise to symptoms which lead to their early removal. When they grow outward into the cheek they may attain a large size and be mistaken for tumors of the parotid, which they much resemble. The accompanying figure gives an idea of the situation, shape, and size of the growth in my case.



A good account of the subject, with illustrative cases, can be found in an inaugural dissertation by Franz Knoche, published at Siegberg in 1888 and entitled *Ueber Lipome der Mundhöhle.*

A STUDY OF THE WEAK FOOT,

WITH REFERENCE TO
ITS CAUSES, ITS DIAGNOSIS, AND ITS CURE;
WITH AN ANALYSIS OF A THOUSAND CASES OF
SO-CALLED FLAT-FOOT.

By ROYAL WHITMAN, M. D., M. R. C. S.

(*Concluded from page 583.*)

The principles of the treatment which leads to the permanent cure of the weak foot and flat-foot are very simple, but their application varies somewhat according to the grade and duration of the deformity. The object of treatment is to change the weak foot, not only in contour but in habitual attitudes and in power of voluntary motion, to those of the normal foot, because a cure is impossible until function is regained. The first step must therefore be to make passive motion free and painless to the normal limit, for the obstructions to the motion of the machine must be removed before the power can be properly applied. The increase of muscular strength and ability on which ultimate cure depends is not possible while motion is restrained by deformity or pain or by adhesions or contractions.

The weak foot, because of inefficient ligaments and muscles unable to hold itself in proper position, must in many instances be supported until regenerative changes have taken place in its structure. Such support is necessary to retain the joints in proper position, otherwise normal motion is impossible, and to hold the weight in its proper relation to the heel and the strain in its normal relation to the foot.

When these essentials are provided the patient may cure himself by the proper functional use of the foot, and by an avoidance of attitudes that place it at a disadvantage.

It may be well to describe, first, the treatment that must be applied to all classes of weak foot in which a cure is to be attempted, and which by itself is sufficient in the milder types, before calling attention to the modifications that may be necessary in special cases.

In practically all cases it will be necessary to provide the patient with a proper shoe, for the shoe is usually directly the cause of the minor deformities, and indirectly, in many instances, of more serious disability.

The proper shoe should contain sufficient space for the independent movements of the toes. This motion is illustrated in the walk of the barefoot child. As the weight falls on the foot the toes expand, and as the body is raised on the foot they contract. The important leverage action of the great toe and the support afforded the arch of the foot by it have already been mentioned.

The ordinary shoe often cramps the toes into a distorted mass, so that independent motion is quite impossible. The sole of the shoe should be a protection and a support to the foot; the sole of the ordinary shoe is neither, and is of such shape that distortion of the toes is inevitable.

A very good demonstration of a proper sole may be made as follows: The bottom of a normal foot is smeared with vaseline and an imprint made on a sheet of white paper. As the weight is borne the outline of the foot is traced with a pencil; the imprint will show the weight-bearing portion of the foot, the outline its actual size. The sole of the shoe should at least be wide enough to support the entire imprint, and ought to be sufficiently wide to include the entire outline of the foot. The ludicrous disproportion between the size, width, and shape of the ordinary woman's shoe and the imprint and tracing of the foot is often a very convincing argument in favor of a change.

If the imprint of a normal foot is made, the tracing of its outline will correspond to a slightly exaggerated Waukenphast last, practically straight on the inner side, so that slight lateral motion of the great toe is allowed. There can be but one proper shape for the shoe—that which corresponds to the outline of the undistorted foot. It is not, therefore, a question of square or pointed toes, or so-called common-sense shoes, but the simple relation of the sole to the shape of the foot (Fig. 12). The wider the sole and the heel, the greater will be the stability and security afforded the weak foot as contrasted with the narrow sole and the high heel.

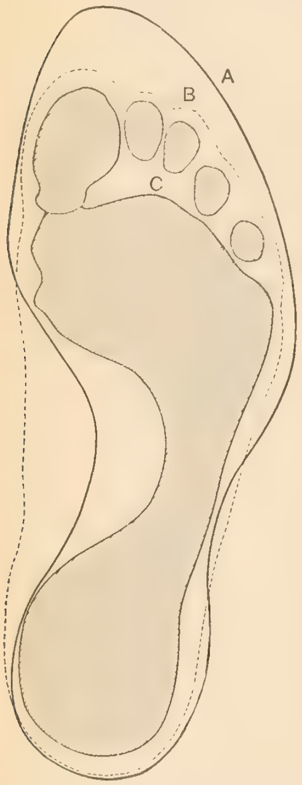


FIG. 12.—The proper relation of the sole to the shape of the foot. A, outline of sole; B, outline of foot; C, imprint of foot.

The prevention of distorted toes and the discomfort of the abused foot is a matter of great importance in childhood. It should be insisted that the sole of the shoe be of such shape and width as to allow of independent movement of the toes. Unfortunately, little children are often seen wearing shoes of the shape usually assumed at years of discretion. In this regard girls suffer more than boys, as women do more than men. The girl who may have worn comparatively harmless shoes until the age of ten years or thereabouts changes suddenly to the high heel and narrow sole, and the process of distortion begins, the amount of distortion and the degree of discomfort depending on the amount of work required of the foot. Wide soles and no heels should be worn as long as possible by children for protection from injury and because the high heel limits the necessity for, and therefore the use of, the entire range of motion of the foot and ankle.

A simple expedient in the treatment of the weak foot and an aid in balancing it properly is to raise the sole and heel of the shoe slightly on the inner side to simulate the wearing away on the outer side, as in the use of the normal foot. This aids in overcoming the valgus, and is of special importance in the treatment of the weak foot in childhood.

When the patient stands properly balanced in the proper shoe his attention is called to the three elements of weakness. He is instructed to guard against valgus by throwing the weight on the outer side of the heel; to guard against abduction by keeping the toes almost straight in front of the body; the significance of the bulging on the inner side of the foot is pointed out to him, that he must prevent this by aiding the arch by the power of the great toe, as already illustrated. The importance of leverage is shown him, that he must try to feel the sole of the shoe with his toes and the active lift of the calf muscles by fully extending the leg and raising the body on the foot from time to time. That he must avoid long continuance in one position, especially the passive posture, which simulates the attitude and deformity of flat-foot. In short, he is instructed in the mechanics of the foot and its voluntary protection.

Although the proper walk is the best of exercises, it is important to show the patient the normal range of motion in all directions and let him endeavor to reach it by voluntary exercises. Raising the body on the toes, first on both feet, finally on one foot, for from twenty to a hundred times is a very good exercise for the foot and for the calf. In many instances this very simple treatment is all that is necessary, and the symptoms of strain and tire completely disappear, but in cases of more severity the patient is not able to prevent deformity voluntarily, consequently a support in necessary to hold the foot in proper position and to relieve discomfort. It is usually necessary in the weak and flat foot of childhood, because one can not command the aid of the patient.

In applying a support to the weak foot the nature of the deformity that is to be prevented must be borne in mind: that the flat-foot, for example, is not a direct breaking down of the arch, as is usually taught, but a lateral deviation and sinking—a compound deformity, as has been already described—so that a brace, to be efficient, must hold the foot laterally as well as support the arch. At the same time it should not prevent the normal motions of the foot, and thus interfere with the increase of muscular strength and ability, on which ultimate cure depends. The supports that have been ordinarily used for flat-foot do not fulfill the conditions; the pads and springs placed beneath the arch are intended to support it by direct pressure, without regard to the valgus or the abduction; they are usually ill-fitting and often of such length and shape as to splint the foot and thus prevent its motion. Leg braces which control the valgus do not often accurately hold the foot, and their weight and unsightliness are fatal objections to their use in the early cases, in which prevention of subsequent deformity is of such importance. No brace should be applied to a deformed and rigid foot, because it is unable to shape itself to the support; the spasm and rigidity must be first relieved by preliminary treatment, as will presently be described.

The brace that has been used by me for nearly ten years was designed to meet the conditions which have been mentioned, and, notwithstanding the time and care necessary for its application, it has come into very general use here and elsewhere. On the theory that a perfect fit is essential in a brace, it has always been insisted that a plaster cast of the corrected foot should be taken in every case. Casts are easily and quickly made in the following manner: Seat the patient in a chair; in front of him place another chair of equal height; on it lay a thick pad of cotton batting and cover it with a square of cotton cloth. Put about a quart of cold water into a basin and sprinkle plaster of Paris on the surface until it does not readily sink to the bottom; then stir. When the mixture is of the consistence of very thick cream pour it upon the cloth. The patient's knee is then flexed, and the outer side of the foot, previously smeared lightly with vaseline, is allowed to sink into the plaster and, the borders of the cloth being raised, the plaster is pressed against the foot until rather more than half is covered. The foot should be at a right angle with the leg and in its normal relation to it, the sole being absolutely level with the leg, at a right angle to the floor. As soon as the plaster is hard its upper surface is coated with vaseline and the remainder of the foot covered with plaster; the two halves are then removed, smeared lightly with vaseline, and bandaged together. The interior is dampened with soapsuds and is then filled with the plaster cream. In a few moments the plaster shell may be removed, and one has a reproduction of the foot, which, when properly made, should stand upright, without inclination to one side or the other. In many instances it will be of advantage to deepen the inner and outer arches of the cast, in order that the arch may be slightly exaggerated, especially at the heel, so that the depression and inversion of the anterior extremity of the os calcis may be prevented. This model serves for the outline of the brace to be drawn upon it, as illustrated in the diagrams.

The brace, cut of the best sheet steel, 18 to 20 gauge, is molded upon it and tempered, so that as it is applied for the purpose of preventing deformity it may be practically unyielding to the weight of the body.

It will be noticed that the brace clasps the weak part of the foot and holds it together; the broad internal upright portion covers and protects the astragalo-scaphoid junction (Fig. 13); rising well above the scaphoid, the external arm covers the calcaneo-cuboid junction (Fig. 14) and the outer aspect of the foot to a height sufficient to hold the foot securely. The lower portion provides a firm, comfortable support for the sole, yet, reaching from the centre of the heel to just behind the ball of the great toe, it does not restrain the normal motions of the foot (Fig. 15).

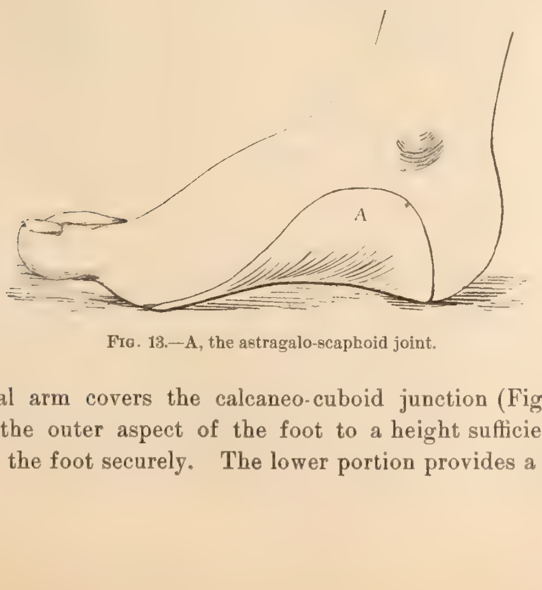


FIG. 13.—A, the astragalo-scaphoid joint.

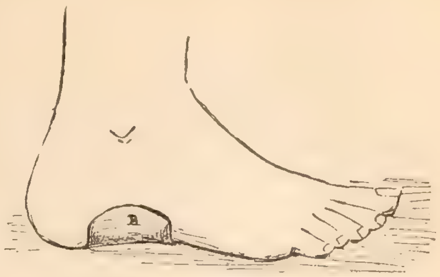


FIG. 14.—B, the calcaneo-cuboid junction.

This brace may be nickel plated and japanned, which makes the smooth finish, or tin-plated, or galvanized, or covered with hard rubber, which is much more durable, as rusting is prevented. It may be covered with leather, or an inner sole may be placed on its upper surface; but this is not usually necessary. As it is fitted to the foot, it finds and holds its own place in the shoe, so that no attachment is necessary, and it may be changed from one shoe to another and its presence in the shoe is not evident.

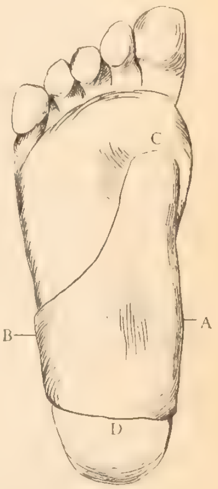


FIG. 15.—C, the great-toe joint; D, the centre of the heel.

Not only does it hold the foot laterally and from beneath, but there is an element of suggestiveness in the slight leverage action which is very important. The patient, instructed to throw his weight upon the outer side of the foot, presses down the external arm, and this tightens the internal flange against the inner side of the foot, so that he instinctively draws in the weak part of the foot away from the pressure or into the normal contour; he no longer everts the foot in walking, and he is not likely to assume the passive attitude, because of the suggestive lateral pressure of the support. The shape of the brace, in general like that of the diagram, is modified in certain cases; for instance, the entire internal aspect of the foot may be weak and must be covered by the internal flange. In very heavy subjects the sole portion must be made larger, or other slight modifications may be necessary. If any portion of the rim of the plate causes discomfort, the edge may be turned away slightly at the point of pressure by a wrench. After a few days the patient no longer notices the presence of the brace, and as it does not show it may be worn indefinitely. It is usually necessary for from three months to a year or longer, according to the condition of the patient and the use to which his feet are put. The brace, properly made and adjusted under the proper conditions, causes no more pressure or discomfort than a well-made shoe, for its principle is quite different from that of the pads that are in common use, to which this objection has been made; the brace should afford support when necessary, and at all times suggest a proper attitude; it is, however, but one of the essential factors in a general scheme of treatment.

In the treatment of children, the passive movements of the foot should be carried out to the full limit at morning and night, until the child has regained the ability to perform them voluntarily. Special gymnastics and massage are of service and may be necessary in certain cases. Bicycling may be cited as one of the best and roller skating as one of the worst exercises for the weak foot. A year is about the time required for a cure of the weak foot in childhood, although attention to the shoes and the attitudes must be kept up indefinitely.

One may now contrast with these mild types of weakness that have been described those cases of extreme deformity in which the symptoms are disabling and in which the foot is rigidly held in the deformed position by muscular spasm. Such cases, often considered hopeless as regards a cure, or even relief, are in reality the most satisfactory, and in no other type of painful deformity can so much be accomplished by rational treatment as in this class.

The deformity must be considered as a dislocation, in which the astragalus has slipped downward and inward from off the os calcis, which in turn is tipped downward and inward and into a position of valgus.

The remainder of the foot is turned outward, so that the relation of the leg and the fore foot is entirely changed; in fact, the fore foot is almost entirely disused. With the deformity one finds, it may be, local periostitis, new facets in the bones, active and passive congestion, and the like.

The amount of permanent change in the bones in the sense of irremediable deformity has been greatly exaggerated by the few post-mortem examinations that have been recorded, for by far the greater number of patients are young adults in whom the extreme deformity is of comparatively short duration and in whom complete cure is possible.

The problem in treatment, therefore, is first to replace the dislocation and to remove all the obstructions to free passive motion, to rest the injured and congested tissues, and to relieve the sufferer from the continuous and debilitating pain. The patient is etherized and, the muscular spasm being completely relaxed, one may estimate the amount of restriction of the range of motion. Of this, muscular spasm makes about half; the aim now is to remove this residual obstruction to motion in every direction and finally to place the foot in the attitude most opposed to that which has been habitual. This is the object of forcible overcorrection as the first step in the systematic repair of the disabled mechanism; its principle must not be confounded with forcible correction carried out with the object of remolding the arch of the foot or in which the simple correction of the deformity is the object in view.

One first extends the foot forcibly, then flexes it to the normal limit, then abducts and adducts, the various motions being carried out over and over until the rigid foot has become perfectly flexible; it is often necessary to allow the patient's leg to hang over the table, so that the foot may be taken between the knees, in order to supply the required force by the thigh muscles. These motions are accompanied by the audible breaking of adhesions and the complete disappearance of the deformity.

In a limited number of cases it will be necessary to divide the tendo Achillis—when, for example, the range of dorsal flexion remains limited in spite of repeated stretching, or when there has been very great pain and tenderness at the medio-tarsal joint, and it is desired to remove the strain of the calf muscle completely. Traumatic cases come especially under this head. This tenotomy has one great advantage, that it lengthens the course of treatment and gives the patient the benefit of a longer rest and opportunity for after-treatment. When the passive range of motion has been regained, the foot is turned downward, then inward and upward into the position of extreme equino-varus, an exaggeration of the attitude of adduction, as shown in Fig. 10. By this manipulation the os calcis is drawn under the astragalus and thrown into an everted position, and the scaphoid is flexed about and under the head of the astragalus, which is then lifted to the limit of normal flexion (Figs. 15 and 16). The attempt is always made to bring the extreme outer border of the inverted foot up to a right angle with the leg, which is the limit of normal forced flexion in this attitude. The foot, thickly padded with absorbent cotton, is then fixed in this clubfoot position by plaster-of-Paris bandages.

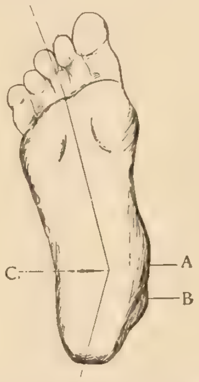


Fig. 16.—Flat-foot before operation. A, the projection of the displaced astragalus and scaphoid; B, the inner malleolus; C, the mediotarsal joint, showing the outward displacement before, the inward rotation behind, this point.

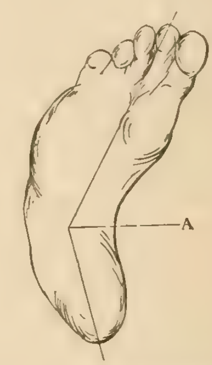


Fig. 17.—The overcorrected foot, with the reversal of the lines of displacement.

Surprisingly little discomfort, considering the force that it is sometimes necessary to apply, is experienced after the operation. The familiar and often intense pain from which the patient has suffered so long is entirely relieved by the correction of the deformity; there is often a sense of tension about the outer side of the ankle and dorsum of the foot, but this is not as a rule of long duration. As soon as possible, often on the following day, the patient is encouraged to stand and walk, bearing his weight on the foot. Walking serves two purposes—to still further overcorrect the deformity and to accustom the patient to a posture entirely different from that so long assumed.

Meanwhile the contracted tissues on the outer side become thoroughly overstretched, the weakened ligaments and muscles on the inner side are allowed to contract, and the local irritation rapidly subsides under the rest from the constant injury to which the foot has been subjected.

The patient is not confined to the bed or house; if both feet are in plaster bandages, crutches are, of course, necessary. The time that the feet should remain in the overcorrected position depends upon the duration of the deformity and the severity of symptoms; this is from one to six weeks, the usual time being about three weeks.

At the end of two weeks, or whenever the patient can support the weight on the plaster bandage without a sensation of discomfort, it is removed, the foot placed in the proper position, and a cast taken for the brace. Immediately after this is done, the foot is returned to the clubfoot position and the plaster bandage reapplied. When the brace is ready the plaster bandage is finally removed; the foot is now in good position and in many instances the arch is exaggerated in depth.

For the first few days, prolonged soaking in hot water, with subsequent massage at intervals during the day, will be found useful in overcoming the swelling and local tenderness that may remain. It is always insisted that a new shoe of the Waukenphast pattern shall be obtained, the sole and heel of which are raised a quarter of an inch on the inner side to aid in the balancing of the weak foot; the brace is then applied, and the patient is never allowed to walk without its support. When the shoe is removed he is instructed to walk on the outer side of the foot or the toes until the foot again becomes strong; in other words, the deformity is never allowed to recur.

The systematic treatment is then begun by the surgeon and patient, the first essential being the attainment of free and painless passive motion in all directions. These motions, which have been so long restrained by deformity, can not be regained without effort, and during this stage the treatment must be carried out by the surgeon himself; if he trusts to the patient or his friends, a cure is out of the question. At least once a day the full range of motion must be carried out to the normal limit.

Three motions—abduction, flexion, and extension—are usually free and painless; but the fourth, that of adduction, is almost invariably resisted by the same quality of muscular rigidity that was present before the operation. By far the most effective method of overcoming this resistance is conducted as follows: The patient is seated in a chair and the surgeon stands in front of him. Let us suppose that the left foot is to be adducted or, as the patients express it, twisted. The surgeon places the foot between his knees; his left hand encircles the heel, the fingers grasping the projecting os calcis and tendo Achillis; the ball of the palm lies against the mediotarsal joint on the inner aspect of the foot; the right hand grasps the outer side of the fore foot and toes; then, by steady pressure of the thigh muscles, the fore foot is forced downward and inward over the fulcrum formed by the projecting palm which lies upon the left knee, the fingers holding the heel steadily in place. This inward twisting is at first resisted by a mixed voluntary and involuntary muscular spasm, which gradually gives way under steady pressure. When the limit of adduction has been reached the foot is firmly held until all pain has subsided, when the patient is instructed to make voluntary movements while the foot is in the corrected position, flexion and extension of the toes, and to contract the flexor muscles of the foot. Finally the patient attempts to adduct the foot, the surgeon supplying the power, which in all cases of this type has been completely lost.

This passive manipulation to the extreme limit of normal adduction is necessary until there is no longer any sensation of pain or tension, for as long as there is the slightest spasm or painful restriction, so long is the voluntary motion limited, cure delayed, and relapse of deformity probable.

During active treatment the patient, by the use of massage, active and passive motion, is constantly working to one end—namely, to regain the lost power of voluntary adduction.

The time necessary to rest the feet, to overcome the local inflammation and muscular spasm, and to regain, in part at least, the range of passive motion, to place the patient in the same position as regards a cure as that of the milder type of deformity, is from three to six weeks.

Usually the patients are told that a month will be necessary, and that at the end of that time they may return to work, free from pain and from the danger of relapse, and that the feet will constantly grow stronger under the work which was before too great for their strength. The time necessary to re-educate the adductor muscles in their proper function depends in great degree upon the intelligence and persistence of the patient. Although in after-treatment massage and special exercises are of benefit, the essentials are very simple: they are an effective brace, a proper shoe, and the passive manipulation which has been described until its object has been attained; the proper walk, the best and easiest of exercises; and lastly, to force into the patient's understanding the method of protecting the weak foot by the alternation of strain and by proper postures.

There are other cases in which the deformity of flat-foot is complicated by rheumatoid arthritis or chronic rheumatism, of which the evidence is seen in various joints, but in which the pain and discomfort seem concentrated in the feet, which are absolutely stiff and deformed. In such cases one can hardly expect a complete cure; but, although the function of leverage may not be regained, still one may hope, by overcoming the deformity, to hold the weight of the body over the foot, so that the pain of a progressive dislocation may not be added to the pain of disease.

I have, in a number of instances, replaced the feet under ether anæsthesia with the happiest results, the improvement in the general condition, consequently in the resistance to the disease after the relief of the local pain and discomfort, being very marked.

Another type of weak foot is the common variety known as chronic sprain of the ankle, to which I have called attention under the title persistent abduction,* in which the foot is rigidly held in an abducted position. The local condition in these cases varies from simple limitation of motion and slight deformity to subluxation of the astragalus; it is simply a variety of the weak and disabled foot, and is to be treated in exactly the same manner as the rigid flat-foot and with the same success. In most instances the so-called chronic sprains will be found to yield very readily to treatment conducted on the principle of an impaired function to be regained.

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* *New York Medical Journal*, October 11, 1890.

Between the two classes of cases, the mild and the severe, one finds every grade of deformity. All cases in which there is marked muscular spasm, local tenderness, and swelling require temporary rest—in many instances simply rest of function, combined with massage; in others, rest in a plaster bandage in an inverted position. In the milder and ordinary class of cases, the use of a brace and shoe will alone relieve spasm and pain, and the range of motion can usually be regained by manipulation, passive motion, and the proper use of the foot. Occasionally, even in childhood, limitation of normal motion which is not due to pain may prevent the proper use of the foot, and, if it does not readily yield to manipulation or mechanical stretching, tenotomy should be performed and followed by prolonged overcorrection of the deformity. The origin of the muscular inequality may very probably be in some instances an unnoticed and rapidly cured anterior poliomyelitis, which is still sufficient in its effects to unbalance the foot, and in others the long duration of the deformity, but, whatever may be the theory of its causation, it is again emphasized that obstruction to motion in every direction *must* be overcome before a complete cure is possible.

It must be apparent that in many instances the cure of the weak foot is out of the question, either because of the want of energy or opportunity on the part of the patient, or because of the local or general conditions, types familiar in out-patient practice. In such cases raising and strengthening the inner side of the shoe by the wedge-shape leather sole, as used by Thomas, splints the painful foot and aids in relieving the strain. If the symptoms are more acute, the adhesive-plaster strapping, as advocated by Cottrell and Gibney for the treatment of sprains, is often of service, although it is applied in a different manner and with a somewhat different object in view. One end of a strip of adhesive plaster, about fifteen inches long and three inches wide, is applied to the outer side of the ankle just below the external malleolus; the foot is then adducted and the band is drawn tightly beneath the sole and up the inner side of the arch and leg, and is stayed in this position by one or two plaster strips about the calf. Narrow plaster straps are then applied about the arch and ankle in a figure-of-eight manner, and a bandage is applied. The object of the dressing is to aid in holding the foot in the proper position by the support and suggestiveness of the plaster, and to provide the firm compression about the arch that is always agreeable to the sufferer from weak foot. This treatment, combined with the built-up shoe, is often very effective in overcoming the acute and disabling symptoms of the weak and injured foot.

The various cutting operations for the relief of flat-foot do not call for extended comment in a paper devoted to its prevention and cure. The typical operation aims at removal of deformity simply; functional cure is made impossible by the destruction of the mediotarsal joint. It hardly seems possible that adhesion between the astragalus and scaphoid bones can for any length of time withhold a recurrence of deformity of the nature and origin of flat-foot, and in all the cases that I have examined in which this operation had been performed there was still local tenderness and muscular spasm and even relapse of the deformity.

The operation of advancement of the extremity of the os calcis, as proposed by Gleich, in order that it may be placed in relation to the leg somewhat like that of a Pirogoff amputation, is not likely to be adopted, nor is the scoring of the sole of the foot with the hot iron likely to become popular, as advocated by Bond, for the purpose of obtaining scar contraction.

The most innocent and rational of the operations for flat-foot is the supramalleolar osteotomy of Trendelenburg; it is, unfortunately, by no means always successful, and the necessarily pronounced artificial bowleg is likely to prevent its extended use in this country.

In all these operations the element of rest necessary for weeks or months must be taken into consideration, as explaining the immediate effect of whatever procedure is adopted. An investigation of final results will prove, I believe, as might be predicted from the nature of the deformity and the complex structure of the foot, that there is no short and easy method by which a cure may be attained.

A brief analysis of a thousand cases of so-called flat-foot may present certain points of interest. No cases of incidental or paralytic flat-foot are included in the statistics, which represent the new cases treated in the out-patient department of the Hospital for the Ruptured and Crippled during the past five years:

The Age and Sex of the Patients.

AGE.	Males.	Females.	Total.
Ten or less	68	30	98
Ten to fifteen	112	87	199
Fifteen to twenty	144	83	227
Twenty to twenty-five	94	53	147
Twenty-five to thirty	68	41	109
More than thirty	132	88	220
	618	382	1,000

Foot affected: right, 133; left, 138; both, 729.

In fifty-eight cases the cause of the disability appeared to be injury, and in sixty-five instances it was apparently due to rheumatism or rheumatoid arthritis. The symptoms usually appear first in one foot, and, as a rule, they are at all times more marked on one side.

In five hundred and sixty-nine instances the duration of symptoms was recorded, being six months or less in four hundred and nine.

The age of the patients is of interest as bearing on the question of prognosis. Four hundred and twenty-six were between ten and twenty years of age, and seven hundred and eighty were less than thirty.

Hospital statistics can not adequately represent the subject of the weak foot, for, as a rule, it was because of disability and pain, not for the deformity or for the milder type of symptoms, that these patients applied for treatment. In the larger proportion muscular spasm and rigidity were present, and in two hundred and thirty-four cases to such a degree that forcible overcorrection was advised, an operation rarely necessary in private practice.

It is in childhood that the prevention of subsequent weakness and deformity is of the first importance, yet but ninety-eight children of ten years of age or less are recorded, and of these a large proportion were brought, not for weakness or deformity, but for treatment of the symptomatic in-toeing.

The philosophy of this theory of the cause and cure of the weak foot may be again briefly outlined.

1. The normal foot may be made to assume an attitude resembling that of the so-called flat-foot (Fig. 2).

2. The deformity of flat-foot is a permanent exaggeration of a normal attitude (Fig. 1); it follows, then, that the habitual assumption of the simulating posture predisposes to deformity.

3. This passive attitude that simulates deformity may be simply the result of habit, but, on the other hand, it must be assumed if the mechanism is weak or overburdened, or if leverage causes pain, or if normal motion is in any way restricted.

4. Weakness may be prevented by guarding the foot from injury and improper use. Deformity may be cured by the removal of obstructions to normal use, by protecting the foot during the period of weakness, and by restoring the normal balance between the work to be performed and the ability of the mechanism.

In conclusion, the following points are again emphasized. Flat foot, in its surgical sense, is a compound deformity, of which the elements of valgus and abduction, the improper distribution of the weight and strain, are of vastly greater importance than the depth of the arch.

The weak and flat foot can be cured, but only by the application of the simple principles that any mechanic would apply to a disabled machine whose structure and use were known to him; in other words, there can be no permanent cure of weakness and deformity unless normal function is regained, or any effective treatment unless it has this end in view.

The term weak foot has at least this advantage, that it implies nothing that the student must unlearn, for, if functional weakness is recognized, its causes may be analyzed and appreciated; it is because of the misapplication and misapprehension of the term flat-foot, and because of the associations which have so long obscured the rational treatment of the deformity, that the term has been discarded from the title of this paper.

Previous articles on this subject by the writer may be found in the *Boston Medical and Surgical Journal*, June 14 and 21, 1888; vol. i of the *Transactions of the American Orthopædic Association*, for 1888; the *New York Medical Journal*, May 17, 1890, October 11, 1890, and February 27, 1892; and the *Annals of Surgery*, January, 1893.

ON THE INFLUENCE OF ETHER UPON THE KIDNEYS.*

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With the increased use of ether as an anæsthetic, notably in England and on the continent, the comparison between its effect and its safety with those of chloroform has been more studied, until now the differences in favor of ether are sharply defined and clearly marked. In 1890 † I ventured to enter upon the discussion as to whether etherization injuriously affected the kidneys, and presented then a series of forty well-observed cases from which it appeared that where the kidneys were previously healthy no disturbance in the renal function was observed in seventy-five per cent. of the cases, or, reversing the statement, that only in about one quarter of the instances a very slight and transitory trace of albumin was found to be present within a few hours after the completion of the anæsthesia.

My conclusions, however, were felt to be based on too limited an experience to be of much value; but other and more elaborately conducted observations have only confirmed my own impressions. Even before this, Feuter, ‡ of Berne, reported conclusions based on a hundred and fifty clinical cases and thirteen experimental observations in animals on ether narcosis. These were:

1. That ether has no perceptible effect upon the healthy kidneys of animals, who, moreover, are more susceptible than mankind to its influences.

2. That it is not dangerous in persons whose kidneys are slightly diseased.

3. That subsequent disturbances in the circulation of the kidneys, when met with, are very transitory and quickly disappear.

The rapid extension of the use of ether in Europe is best shown in the large total presented by Garré # of 350,000 cases with but twenty-five deaths (or one in 14,000 exhibitions), which warrants one in digressing a moment to compare this with 134,000 chloroformizations with forty-six deaths, or one death in about 3,000 cases. These facts, taken with the careful observations of the actions and complications of ether anæsthesia given by Juillard, Poncet, Ollier, and by the German Surgical Association, have placed much that is of interest and of positiveness at our command.

Without asking your attention to all that has been presented on this subject, I shall, I trust, be permitted to pass rapidly in review the main facts to be deduced from the articles of Garré, already quoted, of Angelesco, ‖ Wunderlich,△

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* Read before the American Surgical Association.

† *New York Medical Journal*, March 1, 1890.

‡ *Deutsche Zeitschrift für Chirurgie.*

Garré. Aethernarkose. *Beiträge zur klin. Chirurgie*, 1894, Bd. xi, Hft. 1.

‖ Angelesco. *Gaz. médicale de Paris*, 1894, No. 50.

△ Wunderlich. *Klin. Untersuchungen über d. Wirkung der Aether- und Chloroform-Narkosis.*

Rindskopf,[*] Wood,[†] Bruns,[‡] Körte,[#] and others, who have within the past year or two written ably on the subject of ether narcosis.

Butter, in five hundred cases of ether narcosis, found only once albuminuria where previously none had existed. Körte, in the six hundred cases that he collected, only found six instances where albumin presented itself, where before the etherization none had been found, and he states very decisively that, in his opinion, ether does not aggravate a damaged kidney, but that chloroform does. He also gave seven instances were albumin pre-existed, but which was not increased by the etherization. Garré says that in slight pre-existing kidney trouble etherization provoked no important increase in the amount of albumin, and he says very emphatically that he does not believe an attack of nephritis is at all likely to occur from an etherization. This positive view is not entirely concurred in by some of the other observers. Wunderlich, in a very admirable *résumé* of the subject, concludes that in an already *existing* case albuminuria is frequently augmented by an ether narcosis; that this is twice as common in chloroform narcosis in the proportion of 11·5 to 6·9 per cent. From chloroform, and much more seldom from ether, are casts to be found in the proportion of 34·8 to 24·6 per cent. If cylindruria previously exists from both ether and chloroform narcosis there is an increase to be met with, due in each case, he believes, to an ischæmia of the kidney or to a lessened blood pressure. Casts, he thinks, are due to a direct irritation of the kidney epithelium from the action of the ether or chloroform. He adds, finally, that an ether nephritis may be excluded from surgery. In respect to the renal irritation Wood differs from him in some respects, because, in fifteen cases in animals where it was carefully tested as to the presence of ether in the urine, none was recognized by the various tests carefully applied.

Yet this same observer admits that etherization in dogs produced cloudy swelling of the epithelium, which, however, he supposes to be due to the general intense congestion by some of the retrograde ether products and not to the ether itself. Wood's conclusions are that if the kidneys be healthy, the action of ether on them does not amount to much; but if they are diseased, the tendency exists to increased irritative processes.

In respect to these investigations of Wood's I must recall to your attention that the criticism which Feuter made upon his own experiments upon animals must be borne in mind—to wit, that animals are much more sensitive to the action of ether irritation upon the kidneys than mankind.

It may not be amiss to call attention to the conclusions of Bruns, lately presented to us, that some of the bad effects of ether on the lungs and kidneys are due to the oxidation and formation of aldehyde and other products of decomposition caused by the exposure of ether to light, and to the possible mixture of air in the ether bottles, and he advises, to counteract these dangerous impurities in ether, that it should be inclosed in small, fully-filled, light-forbidding flasks, which, until used, should be kept in a cool place. These conditions, it is hardly necessary to be remarked before an audience of American surgeons, were and always have been filled in the cans of ether presented to us by Squibb and other ether manufacturers.

Though somewhat outside of the subject assigned to me for discussion, I here call attention to the fact that Angelesco has shown, what had been previously taught us by Swain in connection with chloroform, that in ether narcosis the temperature falls from seven tenths to one degree, with the difference that in ether there is a vaso-dilatation of the surface and in chloroform a vaso-contraction.

As perhaps elucidating some of the peculiarities and admitted mishaps that occur in etherization, the fact elucidated by Fayer and by Wright might be mentioned—that coagulation of the blood in the smaller vessels and capillaries is very apt to come on with imperfect oxidation. This pertains strongly to the asphyxia or partial asphyxia that we occasionally meet with in an etherization.

The results of my own observations confirm in a great measure the majority of the statements just cited. I present them in a somewhat extended manner as follows:

Summary of Results.—Out of a total number of cases (three hundred and five) collected and carefully observed by Dr. Edgerton, my hospital house surgeon, some with and some without record of the effects of temperature changes, there were the following results:

I. Normal before and after	254 cases.
Abnormal before, but without any increase in albumin or casts afterward	7 "
Abnormity lessened afterward; or, in other words, those without detrimental effect	3 "
	264 cases.

Or about eighty-seven per cent.

II. Normal before, afterward abnormal	31 cases.
Abnormal before, afterward abnormity increased	8 "
	39 cases.

Or about thirteen per cent.

In nearly all of the cases marked "abnormal afterward" the albumin or casts disappeared or decreased within a few days after the etherization.

With a Record of Subsequent Temperature.—Total number of cases, 192.

I. Temperature normal afterward.

a. Urine normal before and after, 68 cases; urine normal before, abnormal afterward, 15 cases—viz.:

Before etherization.	*After etherization.*	
Normal.	Albumin, a trace	8 cases.
"	" 1 per cent.	1 case.
"	" 10 " and granular casts	1 "
"	" 3 " and hyaline casts	1 "
"	Casts alone	4 cases.
		15 cases.

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[*] Rindskopf. *Centralbl. für Chirurgie*, No. 18, 1894. *Beiträge zur klin. Chirurgie*, Bd. xi, 1895; ii, 1894.

[†] Wood, G. B. *Medical Magazine*, 1894, p. 802.

[‡] Bruns. Zur Aethernarkose. *Berlin. klin. Wochenschrift*, 1894, No. 41.

[#] Körte. *Zum Vergleiche der Chloroform- und Aether-Narkosis.*

b. Urine abnormal before and after etherization, with no change in consequence, 4 cases—viz.:

A trace of albumin	2 cases.
Five per cent	1 case.
A few casts	1 "
	4 cases.

c. Urine abnormal before and after etherization, but abnormity increased, 2 cases—viz.:

Before.	*After.*
Albumin, 3 per cent.	Albumin, 10 per cent.
" a trace, and a few granular casts.	" 15 " and a few granular casts.

d. Urine abnormal before; lessened after etherization, 1 case—viz.:

Before.	*After.*
Albumin, 5 per cent., no casts.	Albumin none, few granular casts.

II. Temperature afterward, 100° F.

a. Urine normal before and after, 46 cases.

b. Urine normal before, afterward abnormal, 6 cases—viz.:

Before.	*After.*	
Normal.	Few granular casts	1 case.
"	Albumin, 1 per cent., no casts	1 "
"	" transitory	3 cases.
"	" 5 per cent., granular casts, nephrorrhaphy.*	1 case.
		6 cases.

c. Urine abnormal before and increased afterward, 1 case—viz.:

Before.	*After.*
Albumin, a trace, no casts.	Albumin, a trace and granular casts.

III. Temperature afterward, 101° F.

a. Urine normal before and after, 22 cases.

b. Urine normal before, and afterward abnormal, 3 cases—viz.:

Before.	*After.*
Normal.	Albumin, a trace.
"	" 2 per cent.
"	" 5 per cent.

IV. Temperature afterward, 102° F.

a. Urine normal before and after, 15 cases.

b. Urine normal before, and afterward abnormal, 2 cases—viz.:

Before.	*After.*
Normal.	Trace of albumin.
"	Few granular casts.

c. Urine abnormal before and abnormity increased in consequence, 3 cases—viz.:

Before.	*After.*
Albumin, a trace, and granular casts.	Albumin, 10 per cent., and granular casts.
Albumin, a trace, no granular casts.	Albumin, 10 per cent., and no casts.
Albumin, a trace, no granular casts.	Albumin, a trace, and granular casts.

V. Temperature afterward, 103° F.

a. Urine normal before and after, 2 cases.

b. Urine normal before, but afterward abnormal, 1 case—viz.:

Before.	*After.*
Normal.	Albumin, 1 per cent. and granular casts.

c. Temperature afterward, 104°, 1 case.

Before.	*After.*
Normal.	Normal.

Restating the foregoing experiences as to the effects of temperature changes occurring within forty-eight hours after an etherization, it will be seen that the urine was normal before and after etherization, accompanied by rise of temperature, in 86 cases, of which there were—

At 100°, 46 cases. At 101°, 22 cases. At 102°, 15 cases. At 103°, 2 cases. At 104°, 1 case.

And that with the urine normal before and afterward abnormal, accompanied by rise of temperature, there were but 12 cases, as follows:

Before.	*After.*
At 100°, 6 cases.	
1 case normal.	Few granular casts.
1 " "	Albumin, 1 per cent., no casts.
3 cases "	" a trace.
1 case "	" 5 per cent., granular casts.
At 101°, 3 cases.	
1 case normal.	Trace of albumin.
1 " "	Albumin, 2 per cent.
1 " "	" 5 per cent.
At 102°, 2 cases.	
1 case normal.	Granular casts.
1 " "	Albumin, a trace.
At 103°, 1 case.	
1 case normal.	Albumin, 1 per cent., and granular casts.

No Record of Temperature.—Total number of cases, 113.

a. Urine negative before and after, 100 cases.

b. Urine negative before, but after ether abnormal, 6 cases—viz.:

Albumin, a trace	3 cases.
Loaded with hyaline and granular casts	1 case.
With albumin and granular casts	1 "
Few hyaline casts	1 "

c. Urine abnormal before and after etherization, but not increased thereby, 3 cases—viz.:

With a few granular casts	1 case.
With a trace of albumin	1 "
With 3 per cent. of albumin	1 "

d. Urine abnormal before, but increased by etherization, 2 cases—viz.:

Before.	*After.*
A trace of albumin.	2 per cent. albumin.
1 per cent of albumin, few casts.	5 " " many casts.

e. Urine abnormal before, but normal afterward, 2 cases—viz.:

Before.	*After.*
A trace of albumin.	Negative.
5 per cent. of albumin.	"

The conclusions arrived at, therefore, are as follows: That etherization in the vast majority of cases in normal kidneys, and even in abnormal kidneys, brings about no detrimental effects; that when any evidences of abnormity present themselves they are transitory in character and not productive of harm; that elevation of temperature, which I had before thought would aggravate the work of the kidney and bring about, in conjunction with an ether narcosis, abnormal excretions, does not appear to exercise any positive influence on this point.

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* This properly should be omitted.

SOME UNUSUAL CASES OF ORBITAL TUMORS EMPHASIZING THE NECESSITY OF CAREFUL DIFFERENTIAL DIAGNOSIS.*

By CHARLES STEDMAN BULL, M. D.

CASE I. *Abscess of the Ethmoid Cells.*—On August 23, 1886, a woman, aged twenty-seven years, was sent to me in the country, where I was staying, for my advice for some trouble with the left eye which had existed for some months, and which had occasioned her considerable anxiety because of her family history. She was a single woman in apparently perfect health, and on casual inspection there seemed to be nothing the matter with her eyes. She had first noticed a slight fullness of the inner end of the left upper lid, unaccompanied by any subjective symptom. This slight swelling had increased very gradually but without either pain or redness. Within the previous week she had become conscious of a dull ache in the orbit. A careful examination revealed the presence of a small, hard, resisting lump at the upper and inner angle of the orbit, just above the lacrymal bone, which pushed the lid before it. It seemed to be firmly attached to the periosteum of the orbit by a rather broad base, but I could trace no further prolongation of the growth into the orbit. The lid was freely movable over it, and the tumor was painless and nonsensitive. There was no exophthalmia and no limitation of the motility of the eyeball in any direction. The growth was the size of a small cherry, and, while hard and resisting to the finger, it was not as hard as bone. There was no interference in the functions of the eye. The patient was slightly hypermetropic, with normal vision and normal visual field, and the ophthalmoscopic examination was absolutely negative. The family history was peculiar and apparently significant. The paternal grandfather had suffered from extensive lupoid disease of the nose and cheek in his old age. The patient's father had had an epithelioma of the right external canthus, involving both lids, which had been removed by excision on two different occasions, and had returned in the cicatrix and now involved both the orbital tissue and the eyeball. One of her father's sisters had died from cancer of the breast after two operations, and another was suffering from cancer of the uterus. There was no syphilis in the family. The patient had been troubled with naso-pharyngeal catarrh for several years, but the secretion was slight except when she caught cold. A careful rhinoscopic examination showed a moderately thickened and succulent mucous membrane in the anterior nares and about the inferior turbinated bones, but there was no pus and no evidence of any disease higher up in the nasal cavity. From the clinical symptoms and the family history, a diagnosis was made of probable orbital sarcoma, starting from the periosteum of the orbit, and the patient was advised to submit to an immediate operation, as the small size of the tumor promised an easy and thorough removal. This she declined to have done, and I saw nothing of her for a period of three months. The condition was then found materially changed. The eye protruded perceptibly from the orbit and was pushed downward and outward as well as forward. The tumor was very prominent, had increased considerably in size, and extended well back into the orbit along the internal wall. There was a constant dull pain in the orbit and frontal region, and the patient complained of a stoppage of the left nostril. The tumor, though still firm and resisting, did not seem as hard as it had been three months before. The middle and upper nasal meatus on the left side seemed occluded, but no positive neoplasm was demonstrable. The patient had become very nervous and anæmic, but apparently from anxiety alone, as she confessed that the pain was not severe but merely annoying. The patient had crossed diplopia from displacement of the eyeball, but the vision of each eye was normal and the ophthalmoscopic examination was again negative. She now consented to an operation, which she was told would necessarily be more serious and extensive than at first suggested, and that it might prove necessary to remove the eyeball before the tumor could be reached, but that the eye would be preserved if possible. She entered the hospital, and two days later the operation was performed, and the result proved an entire mistake in the diagnosis. A curved incision was made entirely through the upper lid and the tarso-orbital fascia, just below the superior orbital margin, from the middle of the lid inward to the median line of the nose, and the cavity of the orbit freely opened. Through this opening the tumor was easily reached and was found to extend far back along the inner wall of the orbit. In endeavoring to separate it from its attachments with spatula and strabismus hooks, its capsule was ruptured, a large quantity of foul pus was immediately evacuated, and the tumor collapsed. A careful examination showed that it had been an abscess of the ethmoid cells. The inner wall of the orbit had disappeared by suppuration and absorption and the body of the ethmoid was one large cavity. The lacrymal bone was immediately punctured, a free opening through it made, and then communication was made with the superior and middle nasal meatus by breaking down some thin bony obstructions. Pus soon appeared in the inferior meatus, and free irrigation was then at once made through the ethmoid cells by syringing with a warm bichloride solution. This was continued until the fluid dropped clear from the nostrils. The wound in the orbit was then carefully washed out, a drainage-tube introduced well into the ethmoid cavity, and cold dressings applied. As soon as the patient had regained consciousness she was placed in a sitting posture in bed, and kept in this position for three days. The ethmoid cavity and nostrils were irrigated twice a day with the antiseptic solution, and on the fourth day the drainage-tube was removed. There was little or no reaction, the purulent discharge rapidly subsided, the wound granulated from the bottom, and in two weeks the patient was discharged. At the end of a month the diplopia had disappeared, and there was only a trace of exophthalmia left.

In this case the mistake in diagnosis was due to the appearance and feeling of the tumor, to the absence of all signs in the nose at first, and to placing too much importance on the family history of cancer.

CASE II. *Adeno-sarcoma of the Lacrymal Gland.*—In May, 1889, a gentleman, aged thirty-five years, was sent to me complaining of an annoying excrescence of one of his lids, as he called it. An examination showed a protrusion of the outer angle of the left upper lid of considerable extent, and a slight displacement of the eyeball downward and inward. On everting the lid a dark-red, lobular mass presented itself, which occupied the upper and outer angle of the orbit, and seemed to be firmly attached to the periosteum. It was closely applied to the eyeball and appeared to extend some distance back into the orbit. The tumor was hard and nonsensitive, and occupied the site of the lacrymal gland. It had been growing for more than a year, but had occasioned no pain and had only recently become annoying. It was freely movable over the eye, but was firmly attached to the bone. No family history of any significance was elicited. A diagnosis was made of tumor of the lacrymal gland, probably malignant, and the patient was advised to have it removed immediately, before any further extension to the orbital tissue, and to this he consented. The operation was done at his residence as follows: Under ether anæsthesia the external canthus was freely incised for about an inch beyond the canthus and the superior canthal ligament divided. The upper lid was then everted and held in place by a tenaculum in the hands of an assistant. The tumor was then seized by a double tenaculum and put upon the stretch, and was then rapidly separated from its loose attachment to the eyeball, care being taken to avoid opening the sheath of the external rectus muscle. The tumor extended some distance backward into the orbit and its under surface was flattened. The adhesions to the periosteum were very firm, but with care and patience the gland was removed intact. The upper *cul-de-sac* was then incised and the accessory gland in the upper lid was dissected out. The cavity was then irrigated and a careful examination was made of the orbit to discover the presence of any diffuse or circumscribed infiltration. Nothing was found, and after a second careful irrigation the incision in the conjunctival *cul-de-sac* was closed by three fine sutures, and the eye closed under cold antiseptic dressings. There was no suppuration, the case healed rapidly, and the patient was discharged on the eighth day. There has been no recurrence of the growth.

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* Read before the New York State Medical Association, October 15, 1895.

The tumor measured an inch and a half in its longest diameter, somewhat over an inch in breadth, and was lobulated and of irregular thickness. It was inclosed in a tough capsule. After hardening it was split open in its long axis, and showed the glandular structure somewhat compressed by hypertrophied trabeculæ. A microscopical examination showed marked hypertrophy, both of the glandular elements and the connective-tissue framework. Scattered all through the tumor, within the acini and between the fibres of the connective-tissue trabeculæ, were very numerous round cells and a few fusiform cells. The vascularity of the gland was much increased, particularly in the fibrous envelope of the gland. A careful comparison of the various microscopic sections cut from different parts of the tumor showed it to be a good example of adeno-sarcoma, with marked tendency to hypertrophy of the connective-tissue elements of the gland.

Case III. *Fibro-sarcoma of the Lacrymal Gland.*—In December, 1887, a young lad, aged fourteen years, was brought to me by his mother, with the statement that for the past five months she had noticed a tumor of the upper lid of the left eye of the boy, which had grown so as to excite her alarm. The patient was a pale, badly nourished, undersized lad, who had never been strong, and had often suffered from glandular enlargements. An examination showed a tumor at the upper and outer angle of the left orbit, which not only pushed the lid downward and forward, but had produced partial eversion of the lid, and presented somewhat below the everted margin of the lid. There was a very slight displacement of the eyeball inward, and when he looked toward the left there was homonymous diplopia. On pulling the lid outward and everting it completely the tumor appeared as a hard, resistant, somewhat lobulated mass of a bright-red color, freely movable under the lid and over the eye, but firmly attached to the bone of the orbit. It extended some little distance into the orbit and was slightly sensitive to the touch. The vision of this eye was normal. In the right eye, on the temporal side, and encroaching on the margin of the cornea, was a small dermoid tumor as large as a large pea and covered by fine hairs. In view of the youth of the patient the growth in the left side was assumed to be rather benign than malignant, and as he had frequently suffered from enlarged and suppurating glands, a diagnosis was made of hypertrophy of the lacrymal gland. The mother was advised that the tumor be removed before any further increase in size should cause damage to the eye, and she consented to have this done. An incision was made through the outer half of the upper lid, just beneath the superior orbital margin and opening directly into the orbit. It was found that the eversion of the lid had been mainly caused by the sagging down of the accessory gland in the lid, which was very much enlarged. The main tumor was found thickly incapsulated and adherent by a broad base to the periosteum of the frontal bone. It was grasped with a tenaculum and was dissected out intact with very little difficulty except at its base, where the adhesions to the bone were very firm. The palpebral portion of the gland was then removed through the same opening. There was rather profuse hæmorrhage, which lasted for some time and delayed the final steps of the operation. An examination of the orbit showed no further growth and no infiltration of the orbital tissue, and the cavity was irrigated with a warm bichloride solution and closed by deep sutures, going entirely through the tarso-orbital fascia. The case did very well, though there was considerable swelling of the parts for three days, but there was no suppuration and but very slight rise in temperature.

The tumor, exclusive of the palpebral portion, was about the shape and size of a large almond, but irregularly lobulated. It was hardened and numerous microscopic sections cut from it, which were then carefully studied. The growth, instead of being a simple hypertrophy of the gland, proved to be an unmistakable fibro-sarcoma, with marked infiltration of the glandular structure with small round cells, and numerous fusiform cells between the hypertrophied connective-tissue fibres of the trabeculæ and in the markedly thickened capsule.

This patient subsequently developed a suspicious tumor in the neck, which grew very rapidly, and he died two years later of exhaustion and anæmia.

Case IV. *Myxo-sarcoma of the Sphenoid, Ethmoid, and Orbit.*—In December, 1887, I first saw a lady, aged fifty-six years, who gave the following history: For about a year she had suffered from a dull pain in the right side of the nose, near the glabella, and in the right orbit, which at first was intermittent, but for some months had been constant and of late quite severe. There had been no interference with the functions of the right eye until three months ago, when she began to see double and the eye began to protrude. About the same time there appeared a rather profuse discharge from the right nostril, which still continues and seems to be purulent in character. The vision of the right eye had recently become somewhat impaired. On examination, the eye was found to protrude forward and outward, and was limited in motility inward and upward. There was a moderate amount of deep subconjunctival injection and some chemosis. The iris was normal in appearance and reaction, the media were clear, and the fundus was normal. Vision in this eye was $\frac{20}{40}$—, and in the left eye was normal. When the patient looked to the left there was crossed diplopia, the image of the right eye being somewhat lower than that of the left eye. The right nostril was nearly occluded by what seemed to be thickened mucous membrane and crowding down of the inferior turbinated bone, and the same thing was observed in rhinoscopic examination. On the floor of the right orbit, near the inner wall and encroaching on the inferior orbital margin, there was a hard, flattened growth, which was smooth and non-sensitive. By the crude methods of transillumination then in use, there was no reflex from the anterior wall of the maxillary antrum. A diagnosis was made of tumor of the antrum, which had perforated the roof of the antrum and entered the orbit. The grave nature of the lesion was at once recognized, and also the probable extension of the disease to other neighboring cavities, and it was deemed impossible to attempt any operation for its removal without a preliminary enucleation of the eyeball. To this the patient consented, and it was decided to operate at once. Under profound anæsthesia the right eye was removed in the usual manner, and, after the hæmorrhage had ceased, a careful examination was made of the orbit. The tumor in the orbit was found to extend backward nearly to the apex, and was directly continuous with a mass which entirely filled the maxillary antrum. The floor of the orbit was absent for about three quarters of its antero-posterior diameter, the inferior orbital margin being practically intact. The growth was carefully removed from the orbit and then from the maxillary antrum. The latter cavity was then thoroughly washed out, and an examination of its interior revealed that the growth had extended through the orifice leading from the antrum into the middle nasal meatus. The contents of the orbit were next entirely removed down to the periosteum, and it was then seen that the tumor involved both the sphenoidal fissure and the ethmoid cells, as part of the os planum of the ethmoid was absent, and the growth was seen to fill the ethmoid cells. The condition of the patient was found to be much more serious than had been at first supposed, and it became incumbent upon me to complete the operation as soon as possible. The remains of the os planum were at once taken out and the entire contents of the ethmoid cavity were removed. The lacrymal bone was cut away and the growth removed from the nasal meatus, and also the middle and inferior turbinated bones. A large communication was thus made from the ethmoid down to the inferior meatus of the nose, and free irrigation brought away numerous small pieces of the tumor. Another careful examination revealed the hopelessness of the case, for the growth undoubtedly involved the sphenoidal antrum, as well as the sphenoid and palate bones. A drainage-tube was introduced into the ethmoid cells and brought out through the nostril. The orbit was loosely packed with iodoform gauze and cold antiseptic dressings applied. The patient rallied well from the operation, and on the fourth day the drainage-tube was removed, as free irrigation was easily maintained. She did very well for a month, her temperature having fallen on the fourth day, and there was no further rise. At the end of a month she was discharged from constant observation. There was at this time a healthy looking orbit and maxillary antrum, and no demonstrable return of the growth in the ethmoid cavity, and there was no discharge from the nose. She still complained, however, of deep-seated headache, and two months after the operation the tumor reappeared in the orbit, coming from the sphenoidal fissure. Somewhat later the ethmoid cavity began to fill up. I declined all further operative interference, and told the patient's family of the inevitable termination of the case. She died about ten months later, apparently of exhaustion. At that time the growth had filled the orbit and protruded upon the cheek. It had extended into both nostrils and pharynx, and had refilled the right maxillary antrum. It had not extended into the left orbit, and vision in the left eye remained good up to the end.

The tumor had undoubtedly originated in the sphenoid antrum and had thence extended to the adjacent cavities and bones of the face. No autopsy was held, but there is no doubt that the disease would have been found in the frontal sinus. The tendency of most of these tumors is to extend from within outward, which is probably the explanation why an extension to the cavity of the skull is comparatively rare, and, when it does occur, why it is one of the last directions in which the disease tends to extend.

The tumor proved, on microscopical examination, to be a myxo-sarcoma, with numerous small round cells, some few large nucleated cells, with very little connective tissue, but with the cells imbedded in an almost homogeneous, finely fibrillated tissue.

Case V. *Malignant Tumor of the Anterior Cerebral Fossa and Orbit.*—Early in February, 1888, I was asked to see in consultation a woman, aged forty-three years, who gave the following history: For about eight months she had complained of constant frontal headache, mainly confined to the right side of the forehead, but occasionally extending to the left side. These headaches were very severe for some months, but of late they had become much less so, and had been succeeded by a constant dull ache in the right orbit. About three months before I saw her she began to complain of diplopia and vertigo, and the latter symptom had been considered by her family physician as due to the double vision. The right eye soon began to protrude, the displacement being downward and outward as well as forward. The vision failed rather rapidly, and the sight of the left eye also became somewhat affected. When I saw her the exophthalmia was very marked, in the direction downward, outward, and forward, and the motility inward and upward very limited. The media were clear, but the optic nerve was of a dirty-white color, with small arteries. The disc was clearly defined. Vision in the right eye was reduced to perception of light. In the left eye there was a very slight reduction in the calibre of the arteries, but the disc was nearly normal in color and appearance and vision was $\frac{20}{50}$.

A very careful examination of the right orbit did not reveal the positive presence of a tumor, though I thought that I detected a slight swelling on the root of the orbit near its junction with the inner wall.

The patient was an old syphilitic, and, in view of the severe frontal headaches which had marked the onset of the disease, it was inferred that she had a severe, extensive periostitis of the frontal bone and perhaps of other bones of the orbit, which had ended in the development of a diffuse gummatous infiltration or perhaps even of a hyperostosis. With this diagnosis in view she was put upon very large doses of potassium iodide, which was pushed rapidly to toleration, combined with moderate doses of mercuric bichloride. She bore the treatment very well, but the symptoms continued to increase, and after two months, there being no improvement, and the vision of the left eye having diminished to $\frac{20}{100}$, the treatment was discontinued. During all this time strychnine had been administered in the hope of arresting the degeneration of the optic nerves. The vertigo and staggering in gait had disappeared before I saw her, which rather confirmed the diagnosis of her physician that they were due to the diplopia, for as the vision of the right eye became abolished the double vision and vertigo ceased.

At the end of the second month the exophthalmia had increased and a tumor could be made out above and on the inner side of the orbit, and I decided to attempt its removal. The eyeball was enucleated in the usual manner, and the presence of a tumor was at once manifest, apparently attached to the roof and inner wall of the orbit. A more careful examination, however, showed a large, irregular hole, opening directly into the anterior fossa of the skull, and through this the tumor protruded into the orbit. The hole in the roof measured, roughly, about an inch in all directions. Very careful manipulation with the finger and probe showed that the growth was firmly attached to the dura mater and extended into the anterior fossa in all directions. The location of the tumor explained the severe headache, and the lessening in the severity of these headaches was probably due to the perforation of the roof of the orbit and the extension of the tumor into the orbital cavity, which diminished the pressure on the brain. The growth probably extended far backward in the cerebral fossa and must have pressed upon the right optic nerve and even the optic commmissure, as both nerves were affected. Unfortunately, no examination of the fields of vision had been made by any one previous to the loss of vision in the right eye. If this had been done something might have been learned from the fields and their limitations, which would have assisted in the diagnosis.

The nature of the lesion, of course, prevented any further operative interference, and the case was treated as one of simple enucleation. I was enabled to see the patient for a month after the operation, and the tumor increased slowly in size during that period. She then left the city and I have heard nothing of her since.

CASE VI. *Sarcoma of the Dura Mater and Orbit.*—In January, 1889, a lady, aged thirty-two years, called on me with her husband, and gave the following history: For more than two years she had been conscious of a dull ache and discomfort in the right orbit, with occasional headache. For several months she had noticed a steady failure of vision in the right eye, and recently the same thing in the left eye. There was also some protrusion of the right eye. The headache had never been constant, but of late had increased in frequency and severity, and the pain in the orbit was also more severe. There had been no other head symptom.

An examination of the eyes showed the following existing conditions: Moderate exophthalmia on the right side, the protrusion being directly forward. No loss of motility in any direction. Iris and pupil normal. Media clear and fundus perfectly healthy. Refraction hypermetropic. The right eye could be pushed back in place without causing any pain, but when the pressure was relieved the exophthalmia returned. The left eye was normal in every respect. An examination of the field of vision of the right eye showed a marked limitation downward and outward. The urine was normal and, with the exception of the headache and the limitation of the field, there were no symptoms suggestive of cerebral disease, and, as both these symptoms might be caused by a growth at the apex of the orbit, a provisional diagnosis was made of orbital tumor. The vision was $\frac{20}{200}$ in the right eye and $\frac{20}{50}$ in the left eye. There was no disturbance of the color sense. I advised waiting for further developments.

The symptoms increased slowly, and it was not until nearly a year had elapsed that the exophthalmia had reached such a degree as to point unmistakably to the presence of an orbital tumor. The headache had changed but little and the vision of the right eye was slightly worse, while that of the left eye remained unchanged. No growth was visible or even tangible in the orbit, and it was possible that its location was at the extreme apex of the orbit and on the nasal side. The patient was told that an attempt should be made to remove the tumor, and that it would be necessary to sacrifice the eye in the operation, and to this she consented.

Under ether anæsthesia the right eye was enucleated in the usual way, and an examination then showed that the entire apex of the orbit was filled by a growth which seemed firmly united to the periosteum. The contents of the orbit were then entirely removed down to the periosteum and carefully examined. The growth surrounded the optic nerve, and the muscles and nerves were all involved in the neoplasm. After the cavity of the orbit had been washed out the growth could be seen protruding from the optic foramen and sphenoidal fissure. The orbit was then closely packed with iodoform gauze and a bandage applied. The patient rallied promptly from the ether and effects of the operation and was up and about within a week. The pain in the orbit ceased at once and the headache became less severe for nearly two months. It then returned with its former severity, and at times the patient became delirious. She succumbed to an attack of pneumonia five months after the operation, but the growth had already reappeared at the apex of the orbit. No autopsy was allowed.

The tumor had probably originated in the dura mater on the right side, somewhere in the vicinity of the sella turcica, and may have spread backward into the middle fossa, as well as forward through the optic foramen and sphenoidal fissure. If there had been any positive evidence of an intracranial growth, I should have declined to operate, as the case would then have been classed as among the inoperable tumors. The orbital part of the growth was sarcomatous in character. Sections showed that the orbital cellular tissue, the muscles, and the sheath of the optic nerve were all infiltrated with masses of small round cells, with groups of fusiform cells scattered between them.

CASE VII. *Cystoid Angeioma of the Orbit.*—In the autumn of 1890 a gentleman, aged twenty-two years, called on me, complaining of exophthalmia and a pulsation in the orbit back of the eye, and gave the following history: When a boy of ten years of age he had received a wound of the right orbit from a sharp twig, the end of which had torn the conjunctiva near the external canthus and entered the orbit, and it was removed by a physician on the same day. There was a great amount of reaction, the lids being very much swollen, and ever since the right eye had turned in toward the nose. The vision of the eye was somewhat impaired, but subsequently improved, and he had no further trouble with it until about two years before I saw him. He had always been conscious of a stiffness in its motions, and at times he felt a pulsation in it, but at this date the feeling of pulsation became continuous, and soon after the eye began to protrude.

On examination, I found the right eye situated on a lower plane than the left eye, and the exophthalmia was forward and outward. The motility outward was somewhat impeded. The upper lid was swollen and thickened, hung down over the cornea, and pulsated. When viewed in profile the whole eye was seen to pulsate, and this motion was communicated to the fingers when placed upon it. At the upper and outer angle of the orbit could be felt a ridge of bone running backward into the orbit. The media were clear, the iris and pupil were normal, the fundus had a grayish hue, and the retinal vessels were all engorged and pulsated strongly. Vision of the right eye was $\frac{20}{30}$. The left eye was normal in every particular. The subconjunctival vessels were much engorged. On pressing the eye backward a distinct elastic mass was felt behind it. No growth could be felt in the orbit on either side, above or below.

A diagnosis was made of vascular tumor of the orbit, of unknown nature, but presumably of traumatic origin. Pressure on the carotid in the neck produced no effect on the pulsation or the exophthalmia. As there had been no cerebral symptoms at the time of the injury and the case proved to be one merely of orbital injury, the probability was that the orbital walls had not been fractured and that the injury was confined to the vessels of the orbit. The exact nature of the tumor it was impossible to determine. An incision was made in the ocular conjunctiva on the temporal side, and a small trocar was introduced and passed down toward the apex of the orbit. It met some resistance, which suddenly gave way, and this was followed by a small gush of thick, dark-brown, almost black blood. The exophthalmia receded somewhat but not entirely, and after a few seconds the flow of blood stopped. The result of the puncture and the after-conditions seemed to contraindicate the presence of any aneurysmal tumor and to favor the view that the lesion was cystoid in character. In less than a week the exophthalmia was as great as before the puncture and the pulsation was as marked, if not even more so. The location of the tumor at the apex of the orbit and its vascular character would have prevented any attempts at its removal, unless preceded by enucleation of the eye, and this I was extremely reluctant to do, on account of the very good existing vision. I therefore decided to first try what could be done by electrolysis, recalling the report of a very successful case by Dr. Thompson, of Indianapolis (*Archives of Ophthalmology*, xii, 1, 1883). Under cocaine anæsthesia the wound in the conjunctiva was reopened, and the negative pole, consisting of a long steel needle, was introduced to the bottom of the orbit through the tumor. The positive pole, a moist sponge, was then placed over the temple, and the current was passed in this way indirectly through the tumor for six minutes. The strength of this current was about six milliampères, and caused severe pain. Some little reaction followed which was readily controlled by cold dressings. One week later, there being no reduction in the exophthalmia, a second attempt was made, and on this occasion both poles were passed into the tumor, one on each side of the eyeball. The same strength of current was employed for about the same length of time. This was followed by a decided lessening of the pulsation and some reduction of the exophthalmia. Four additional applications of the electric current were made at intervals of one week, making six in all. The result, while partially successful, was not entirely so, for while both the pulsation and the exophthalmia were materially lessened, the case was not cured. One unsatisfactory feature of these applications was an increased loss of motility, both outward and inward, of the eye.

After the last application of electrolysis the case remained for nearly two months. The pulsation then began to increase again, and the eye became more prominent. It seemed useless to resort to this method of treatment again, and as the vision of the right eye had materially failed, I decided to enucleate the eyeball and attempt the removal of the tumor *en masse*. The patient was etherized, and the eye was enucleated in the usual manner. Very firm adhesions were found between the tumor and the eyeball posteriorly, and in separating them more or less blood was lost. The optic nerve was divided close to the globe without any difficulty and the latter removed. After washing out the orbit, the apex of the cavity was seen to be filled up by a dark mass, which had no visible pulsation, but on pressing upon it with the finger a distinct pulsation could be felt. The contents of the orbit were then carefully dissected out, and as the apex of the orbit was reached, several vessels of considerable size were met and ligated, one of these being probably the ophthalmic artery. There was comparatively little blood lost, though after the tumor was removed there was considerable oozing, which was finally controlled by iced applications and pressure. The orbit was then thoroughly washed out with bichloride solution (1 to 1,000), and was then packed tightly with iodoform gauze, and a pressure bandage was applied over the closed lids. There was almost no reaction, and on the second day the packing was removed, the orbit again washed out, and the packing and bandage reapplied for two days longer. The packing was then removed and cold dressings applied. The patient was discharged on the twelfth day, and he has had no return of any trouble since.

An examination of the tumor showed some interesting features. It was found to occupy mainly the pyramidal space or funnel between the ocular muscles, but it extended outside the muscular barrier and involved the fatty tissue at the rear of the orbit and extended forward upon the eyeball. It surrounded the optic nerve, which was compressed by the growth. The unusually dark color of the tumor gave the impression of a melano-sarcoma, which was dissipated after it had been opened by a longitudinal incision. It was surrounded by a tough, thick capsule of very dense connective tissue, which under the microscope contained quantities of brown pigment, some in fusiform cells and some as free granules. In the centre were numerous vacuoles containing a thick, dark brown, grumous fluid. These vascular spaces were separated by trabeculæ or partitions of connective tissue, which also contained pigment. Here and there on the walls of the lacunæ were small patches of epithelium which were deeply stained. The points where the needles had entered in the operation of electrolysis were distinguished by the partial destruction of the connective-tissue envelope and the obliteration of the neighboring vacuoles. The optic nerve ran through the centre of the tumor, and cross sections of the nerve showed atrophy of the nerve fibres, but no thrombus of the central retinal artery. Like all tumors of this nature, its progress had been very slow, but the only point in which it differed from similar cases was in the presence of a distinct pulsation, which was not only felt by the patient but observed by the surgeon. Portions of the tumor were so solidified that I could not but think that had the electrolysis been persisted in a cure would have been effected and the patient would have been spared the more serious operation and the loss of the eye.

Since the foregoing was written the report of a very interesting case of cystoid angeioma of the orbit has appeared in the *Annales d'oculistique* for September, 1895, from the pen of E. Valude, in which two applications of electrolysis proved successful in causing a disappearance of all the symptoms.

Corrigenda.—The following corrections should be made in the portion of Dr. Knopf's article published in the *Journal* for October 5th: Page 420, first column, sixteenth line, for "million" read *billion;* page 421, in the table, for "Dr. Tardeau" read *Dr. Trudeau.*

ELECTROLYSER FOR THE SURGICAL TREATMENT OF STRICTURES.*

BY J. A. FORT, M. D.,
PROFESSOR OF ANATOMY IN
THE ÉCOLE PRATIQUE OF THE PARIS FACULTÉ DE MÉDECINE.

IT affords me great pleasure to have the honor of being allowed through the kindness of your president to present to you a new instrument which I have devised and called "electrolyser," for the surgical treatment of strictures by the "linear electrolysis" method.

It is a well-known fact that electrolysis has been discarded on account of the imperfect instruments which were used. My electrolyser has all the advantages of the urethrotome and none of its inconveniences. It looks like a small whip of which the handle contains a metallic wire projecting from the end which connects with the flexible part. This instrument, being first introduced into the urethra, is connected with the negative pole of a continuous-current battery, and the positive pole is connected near the affected part, on the front of the thigh or over the pubes; then the current is turned on.

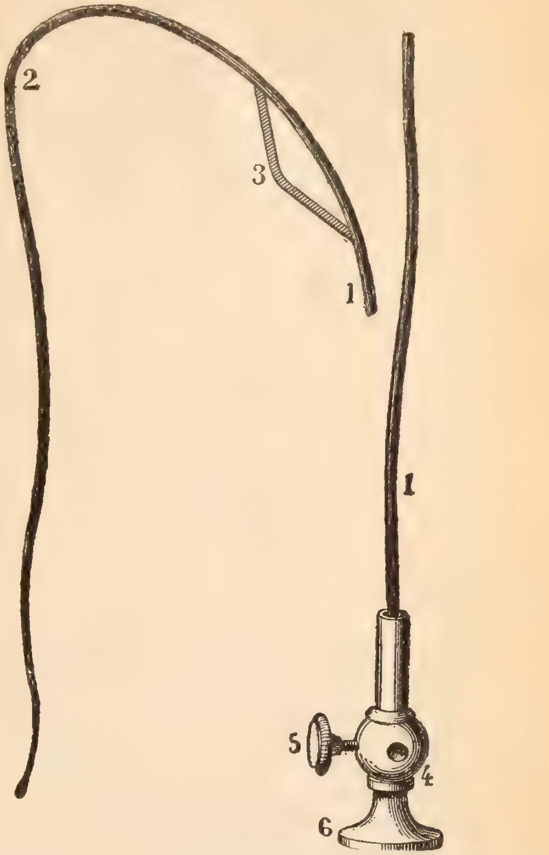
The operation, which is almost painless, requires thirty seconds (on an average), with a current of a strength of at least ten milliampères, as indicated by means of a galvanometer. The electrolyser remains perfectly cool during the operation. In nearly all cases there is no bleeding, or but very little. The urethra is made aseptic before and after the operation, in order to prevent fever. I never allow a sound to remain permanently in the urethra for any length of time after the operation.

Usually the wound resulting from electrolysis heals quickly without any local treatment whatever, and often the patient can attend to his business immediately after the operation.† In nearly all cases I pass a sound the third day after the operation, also the day after. I instruct the patient to pass a sound, No. 22 or No. 24 F., every month and every other month.

With the urethrotome, which cuts blindly, the surgeon can not ascertain the degree of density of the tissue of a stricture. On the contrary, by means of electrolysis, which merely produces a molecular destruction of the stricture, although the instrument remains cool, I have been able to demonstrate that there are two classes of strictures—"soft and hard." Hard strictures are in the proportion of one against five soft ones.

The time required to perform the operation varies with the density of the stricture. Some strictures are so hard that they can not be successfully operated upon by electrolysis.

If my American colleagues who are familiar with the French language are willing to refer to one of my books entitled *Traitement des rétrécissements par l'électrolyse linéaire* (this book can be procured at the library of the Academy of Medicine), they may find it quite interesting, as it will enable them to understand the improvements which have gradually been introduced in the applications of electrolysis to surgery during the last fifteen years. They will also understand how I have applied electrolysis to the treatment of strictures of the urethra, uterus, rectum, and œsophagus.



The electrolyser, shown in two parts, on account of its length. 1, 1, the shaft; 2, the conducting portion; 3, the platinum blade; 4, point of connection with the negative pole; 5, screw-head for fixing the conducting cord; 6, ivory push-button.

Up to date, I have performed in Europe a hundred and thirty-five operations on strictures of the œsophagus (recorded in my book), and with the exception of those which were caused by malignant growths of the wall of the œsophagus all recovered.

It has been my good fortune to meet here some leading surgeons who are authorities in the treatment of strictures, and I am very grateful to them for their kindness in giving me the opportunity to demonstrate the advantages of my method in operating upon some of their patients. The report of the cases is as follows:

CASE I.—Sailor, sixty years old, admitted at Bellevue Hospital October 12th ultimo; Professor Taylor's ward. Five strictures of twenty-five years' standing, the deepest one being located seven inches from the meatus; urethra broken off, with urinous infiltration; serious case. The patient urinates with great difficulty every two hours; his urine is fœtid. Stricture is so narrow that a filiform sound No. 3 F. can hardly be passed through.

Operated by linear electrolysis October 18th in thirty seconds. No bleeding; no after-treatment.

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* Read before the Section in Genito-urinary Surgery of the New York Academy of Medicine, Tuesday, November 12, 1895.

† When the wound does not heal, I merely prescribe injections morning and evening with one part of hydrozone to twenty parts of water.

October 21st.—Sounds Nos. 15, 20, and 22 F. are passed through the urethra. The patient urinates three times every day without pain; large stream; urine normal.

22d.—I passed through the urethra the sounds Nos. 22, 23, and 24 F. in the presence of Professor Taylor. Complete cure. The urinous infiltration caused an abscess which has been treated by Dr. Hart. Recovery.

CASE II.—Thirty-five years old, entered into Professor Taylor's ward October 10th. The stricture is of five years' standing. Urinates six or seven times a day; urine is turbid. I passed a sound No. 13 F. The stricture is treble, the first one being located at an inch and a half from the meatus, the second at four inches and a half, and the third one at five inches.

I operated October 18th in twenty-five seconds. Slight pain; sound No. 22 F.

November 5th.—Sound No. 23 F.

CASE III.—G. D., forty-one years old, entered Bellevue Hospital October 27; Professor Taylor's ward.

Gonorrhœa eight years ago; cured in two months.

Second blennorrhœa two years later; cured in nine months.

Stricture of four years' standing. Two years ago the patient was submitted to internal urethrotomy at the Manhattan Hospital.

Later on, external urethrotomy was performed at the Presbyterian Hospital.

Five strictures. Urinates every two hours; urine turbid.

Electrolysis applied October 30th. The first four strictures were soft, and the operation required but a few moments, but the fifth one required three minutes. No bleeding; pain quite severe.

Each passage of the sound was at first accompanied by chills.

November 1st.—No chills; urine normal.

5th.—Passed sound No. 10 F. Electrolysis again. No accident. Passed sound No. 17 F.

CASE IV.—D., thirty-one years old. Professor Taylor's ward.

Had blennorrhœa eight years ago; cured in seven months. Stricture appeared six months ago. Two strictures, one being four inches from the meatus and the other at six inches. Sound No. 1 E. passed with difficulty. Electrolysis applied October 29th. Duration, twenty-five seconds. No bleeding, no pain, no fever.

November 3d.—Patient well. Passed sound No. 18 F.

CASE V.—Ch. F. P. Three attacks of urethritis; first and second followed by no complications, third followed by stricture. First attack, fifteen years ago; second, ten years ago; last, seven or eight years ago.

Sounds pass occasionally (about two or three times a year) when it was very difficult for him to urinate. About a month and a half ago had retention and was relieved by dilatation with the olivary bougie.

October 26th.—Retention has again occurred and he was brought before the usual Saturday afternoon clinic held by Dr. Gouley. Dr. Fort (from the University of Paris) operated upon him by what is known as the "cold electrolysis" method. Strictures were in the membranous portion of the urethra, and very small, necessitating some fifteen or twenty minutes to introduce the filiform portion of the electrolyser. After the current was turned on twenty-five seconds were consumed in passing through the strictures, accompanied by very little pain. He was then able to pass his urine in a good-sized stream.

29th.—A No. 7 E. sound was introduced by Dr. Gouley.

November 2d.—Patient since has had no difficulty in passing his urine, but the stream is smaller and more dribbling.

CASE VI.—X., thirty-four years old, seen at Dr. Gouley's clinic. Two strictures, very tight, located in the membranous portion of the urethra.

Filiform sounds of the smallest size can pass only with difficulty.

Electrolysis applied October 26th. Operation required twenty-five seconds. The patient, who was troubled with retention of urine, was delighted to get such immediate and complete relief. Did not return.

CASE VII.—A., thirty-four years old. Large stricture of seven years' standing. The probatory ball No. 15 can not pass through.

Electrolysis October 23d. Operation required twenty seconds. No pain, no bleeding, no fever.

October 29th.—I passed a sound No. 15 E. without any difficulty. (French Hospital.)

CASE VIII.—B., forty-nine years old. This patient had several blennorrhœal attacks—the first in 1864, and the last one in 1884. The first symptoms of stricture appeared in 1890.

The disease slowly but constantly developed until to-day, when a surgical operation became urgent.

He does not urinate frequently—six or seven times per day; urine is clear. The urination is accompanied with painful strains.

Three strictures—the first one at two inches from the meatus, the second one at five inches and a quarter, and the third one at six inches. The diameter of the first one is four millimetres; the second one, two millimetres; and the third one, one millimetre. The smallest size probatory ball can not pass through.

Electrolysis October 25th at the French Hospital in the presence of Dr. Henna, Dr. Loredo, Dr. Ferrer, Dr. Guitéras, Dr. Simm, Dr. Nagle, of New York city, and Dr. H. W. Coe, of Portland, Oregon.

The electrolyser passed through the stricture in thirty seconds, after which the patient urinated freely; large stream. Immediately after the operation I passed a sound No. 7 E.

October 30th.—Patient stated that he had no fever since the operation took place, and he urinates freely.

November 3d.—I passed sound No. 10 E.

CASE IX.—Jules J., thirty-two years old. Two strictures, twelve years' standing. One is located at two inches from the meatus and the other one at six inches. The exploratory ball No. 12 could not pass through.

Chronic gonorrhœa, severe pain caused by concomitant urethritis.

Electrolysis, October 23d, required twenty seconds. Slight pain, no bleeding. No sound was passed since, on account of urethritis. (French Hospital.)

CASE X.—R., thirty-nine years old. Stricture fifteen years' standing, after he had gonorrhœa. Passes urine every hour, day and night; small stream, sometimes dribbling.

Five strictures, located respectively at half an inch, two, three, six, and seven inches from meatus.

Sound No. 1 E. passed through with great difficulty. General health of patient is bad, he being thin, weak, and almost cachectic.

Electrolysis, October 10th, in the presence of Dr. Brikelmaier and Dr. Townsend. Second stricture is unusually hard. The operation required ten minutes. Bleeding.

Several days later, I passed the sounds Nos. 7, 8, and 9 E.

October 18th.—I passed the sound No. 9 E., when the patient was discharged.

The patient was troubled with temporary chills at each passage of the sound.

TEN CASES OF STRICTURE OF THE URETHRA OPERATED UPON BY LINEAR ELECTROLYSIS.

No.	Date of operation.	Age.	Beginning of stricture; number.	Complications.	Density of the tissue of the stricture.	Time required for the operation.	Previous treatment.	Concomitant symptoms.	Following symptoms.	Passed sounds.	Results.
1	Oct. 18.	60	25 years; 5 strictures; very small stream; filiform sound.	Rupture of the urethra; urinous infiltration.	Tender.	30 sec.	....	No blood; slight pain.	No fever; rapid improvement.	Oct. 21st, No. 21 F.; Oct. 22d, No. 22; Nov. 5th, No. 23.	Recovery; urine and function normal.
2	Oct. 18.	35	5 years; 1 stricture; sound No. 6 E. passed.	....	"	25 sec.	....	No blood; very slight pain.	....	Oct. 29th, No. 22 F.; Nov. 5th, No. 23.	Do.
3	Oct. 27.	41	4 years; 5 strictures, narrow; filiform sound.	....	Very hard.	3 min.	Internal urethrotomy at Manhattan Hosp. 4 years ago; external urethrotomy at Presbyterian Hosp. 2 years ago.	No blood; pain.	....	Oct. 27th, No. 10 F.; Nov. 5th, No. 17 F.	Cured.
4	Oct. 29.	31	6 months; sound No. 1 E. passed.	....	Tender.	25 sec.	....	No blood; no pain.	....	Nov. 3d, No. 18 F.	Urine and function normal.
5	Oct. 26.	45	14 years; 2 strictures; very narrow; filiform sound passed.	....	"	25 sec.	....	Do.	Second electrolysis.	Oct. 27th, No. 14 F.; Nov. 2d, No. 18.	Do.
6	Oct. 26.	34	9 years; 2 strictures; very narrow.	....	"	25 sec.	....	Do.	The patient did not return.		
7	Oct. 20.	34	6 years; 1 stricture; sound No. 7 E. passed.	....	"	20 sec.	Operated 2 years ago.	Do.	....	Oct. 29th, No. 30 F.	Improvement; persistent pain in lower part of the abdomen.
8	Oct. 20.	32	12 years; 2 strictures; urethritis.	....	"	30 sec.	....	Do.	Urethritis continued.	....	Relieved.
9	Oct. 20.	49	5 years; 3 strictures; sound No. 1 E. passed.	....	"	30 sec.	....	No blood; slight pain.	....	Oct. 20th, No. 20 F.	Urine and function normal.
10	Oct. 10.	39	15 years; 5 strictures; very small stream.	....	Very hard.	10 min.	....	Spoonful of blood.	Fever after each catheterism.	Oct. 11th, No. 17 F.; Oct. 18, No. 19.	Satisfactory dilatation.

CONDYLOMATA OF THE TRACHEA.

By E. HARRISON GRIFFIN, M. D.,

LECTURER ON DISEASES OF THE THROAT AND NOSE
AT BELLEVUE HOSPITAL MEDICAL COLLEGE;
ATTENDING SURGEON OF THROAT AND NOSE DEPARTMENT
OF BELLEVUE HOSPITAL OUTDOOR POOR, NEW YORK.

In July of this year a woman, aged thirty years, applied to me for treatment, complaining of a dryness and irritation in her throat, with a tickling cough; also a difficulty of breathing which increased at times without any assignable cause.

The patient's voice was weak and hoarse, the breath fœtid, and the breathing labored and difficult. The slightest cold would develop a paroxysm of dyspnœa.

She could only sleep with her hand resting under her head or with her back well propped up by pillows.

If she changed this position during the night she would wake up with an attack of dyspnœa and be forced to sit by an open window, seeking relief. The neck was swollen to a marked degree and gave the appearance of a well-developed bronchocele.

The slightest pressure of clothes on the neck gave rise to a feeling of discomfort and made her dread a paroxysm of dyspnœa.

The swelling of the neck had commenced five months previous, and had increased in size to such an extent that she was unable to wear any of her former waists. She had been under treatment for an asthma, but the medicine failed to give her any relief. Her breathing and cough were getting worse day by day and she hardly dared to venture into the streets alone.

Objectively, the patient appeared feeble and weak. She had a yellow complexion and gave a history of losing some twenty pounds in weight. She complained of pains in her back and legs. The latter would swell, impeding her walking. Sharp pains would at times dart across her throat and made her feel as if she was going to strangle.

Upon questioning her, I elicited the fact that she had had a chancre of the vulva some eight years past. She had been under treatment for her syphilis off and on during this period, and at the present told me she had not had a sign of the disease for some years.

The habits of the patient were excellent.

The severity of the paroxysms of dyspnœa and a peculiar cough led me at first to suspect an aneurysm. A thorough examination of her chest was negative, with the exception of a few mucous and sibilant râles.

A marked tenderness was complained of when pressure was made upon the sternum. No diagnostic sign pertained to the skin.

An examination of her mouth, nose, and postnasal space was also negative; an examination of her larynx showed the mucous membrane to be free from any congestion or ulceration.

A view of the trachea during the act of inspiration showed a large projecting and granular growth, red in color and covered with a pultaceous secretion; the growth was irregular on its surface and separated by fissures, their edges being abrupt and sharp.

The projecting mass was attached more to the anterior portion of the trachea and extended around two thirds. It seemed to be situated only a short distance below the vocal cord and extended down on the trachea to the distance of about an inch. The lumen of the trachea was very much diminished. The examination by the laryngoscope was made with great difficulty owing to the patient being very nervous.

The condition of the larynx and her unusual shortness of breath pointed to an immediate tracheotomy. I wished to delay this as a last expedient.

The patient was given large doses of potassium iodide (one drachm four times a day), and unguentum hydrargyri oxidi rubri was ordered to be rubbed in over the thyreoid cartilage.

The case was seen daily at my office for three weeks, when I discharged her with the parts completely healed, but warned her to continue medicine for a certain space of time.

An examination with the laryngoscope at this period showed but slight narrowing of the trachea at the point of the syphilitic affection. Her breathing was normal and the swelling of the neck subsided as she came under the influence of the iodide. She was now able to lie prone in bed and all attacks of dyspnœa subsided.

These cases are extremely rare. Out of the large number of syphilitic cases that have come under my observation at the Bellevue throat clinic for the last thirteen years, I remember having seen only two cases where the trachea was involved in a syphilitic ulceration.

Sir Morell Mackenzie reports but three cases of syphilis of the trachea out of eleven hundred and forty-five patients suffering from syphilis of the pharynx, larynx, and trachea.

112 West Forty-fifth Street.

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga and amounting to about one hundred and eighty dollars, will be made on July 14, 1896, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but can not have been published, and must be received by the secretary of the college on or before May 1, 1896. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within it the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award. The Alvarenga prize for 1895 has been awarded to Dr. Guy Hinsdale, of Philadelphia, for his essay entitled Syringomyelia.

The Association of Assistant Physicians of Hospitals for the Insane.—The second meeting was held at the Michigan Asylum for the Insane, Kalamazoo, on October 24, 1895. The membership, originally composed of medical officers of the staffs of asylums of Michigan, Illinois, and Iowa, was extended to include the assistant superintendents and assistant physicians of all asylums. The next meeting will be held at the asylum at Independence, Iowa, in May, 1896.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
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Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, NOVEMBER 16, 1895.

HÆMORRHAGE AFTER REMOVAL OF THE TONSILS.

The amygdalotome, or tonsil guillotine, in one or another of its multifarious forms, is to be found in almost every general practitioner's armamentarium, and it is to be feared that few who possess it feel any hesitation about resorting to its use, no matter what may be the features of the enlarged tonsil or the peculiarities of the paitent. There seems to be a general impression that ablation of the tonsil by means of the guillotine is free from danger. It is in consequence of this impression perhaps that, as Dr. William H. Daly, of Pittsburgh, said in a recent discussion of the subject before the American Laryngological Association, a report of which we publish in this issue of the *Journal*, there has been "more bad surgery done upon the tonsils than upon any other part of the human body."

This discussion followed the reading of a paper by Dr. John W. Farlow, of Boston, entitled Some Remarks on Removal of the Tonsils, which we printed in the *Journal* for November 9th. Dr. Farlow made a particular point of the danger of hæmorrhage after the use of the guillotine, especially in adults and in cases in which the tonsil was large and tough. Dr. Farlow's statement that "very many cases of troublesome bleeding occur which are never reported" should not pass unheeded, or his other statement that "in delicate children every drop of blood may be valuable." Dr. Farlow was supported by every speaker who took part in the discussion. Dr. Bosworth, of New York, after citing Guersant's statement that in five thousand amygdalotomies he had never seen severe hæmorrhage, added the significant comment that Guersant's cases had all been in children. Dr. Ingals, of Chicago, said that he was well aware of the danger from bleeding when the amygdalotome was used, for he had seen a number of trying instances of the kind. Dr. Daly placed himself on record as saying that "the man who pinned his faith to the statement that there was no danger of hæmorrhage in amygdalotomy would sooner or later meet his Waterloo," and added that he deserved to meet such a fate for relying upon worthless statistics. He himself had met with several cases of alarming hæmorrhage, and gave a striking sketch of a case in which he had made an appointment to remove the tonsils from a farmer's son, but had learned on his arrival at the house that the boy was out on the farm, whereupon he had gone out and met the boy in the woods and done the operation then and there, with the result that he had "had to spend several hours with his fingers in the patient's throat to arrest the hæmorrhage." Dr. Casselberry had had enough cases of serious hæmorrhage to make him "cautious and somewhat anxious" about every patient operated upon with the amygdalotome, and he was not sure that such hæmorrhages might not occur in children; indeed, he knew of a fatal case in a child, three years old, whom there had been no reason to regard as a "bleeder." Dr. Shurly had had two very serious cases of tonsillar hæmorrhage in children. Dr. Murray mentioned an instance in which the patient had nearly bled to death.

If this is what skilled laryngologists have to say of the tonsil guillotine, the general practitioner may well be cautious in its use. If the tonsil must still be subjected to surgical procedures as often as it has been in the past, at least let those procedures be made as free from danger as possible, either by substituting a crushing for a cutting instrument, as advocated by Dr. Farlow, or by taking away "only enough of the projecting portion to relieve the mechanical obstruction and the pressure and irritation produced," which Dr. Shurly has found sufficient.

MINOR PARAGRAPHS.

A NEW JOURNAL OF PÆDIATRICS.

A new semi-monthly journal entitled *Pædiatrics* has made its appearance. The first number is dated January 1, 1896. It is an octavo of forty-eight pages of reading matter. It is published in New York and London. It seems to be owned by Dr. Dillon Brown, of New York, and edited by Dr. George A. Carpenter, of London. Its title is somewhat unnecessarily supplemented by the phrase "devoted to the diseases of children."

THE REPORT OF THE NEW YORK STATE COMMISSION IN LUNACY.

The commission's *Sixth Annual Report*, covering the period from October 1, 1893, to September 30, 1894, has just been issued. It is a volume of nearly seven hundred pages. It deals not only with the State and county asylums for the insane, but also with the private asylums, from both the economic and the scientific points of view, and is replete with interesting matter.

ITEMS, ETC.

The Ogdensburgh Medical Society.—At a regular meeting of the Ogdensburgh Medical Society held recently the following resolutions were unanimously adopted:

Whereas, we, the members of the Ogdensburgh Medical Society, have learned with deep regret that Dr. J. M. Mosier and Dr. Robert Cook, active members of this society and of the medical staff of the St. Lawrence State Hospital, are to sever their connection with our society to enter private practice in their special lines, we realize we are to lose the genial companionship, the able and active co-operation of two of our most estimable and efficient members; be it

Resolved, that we tender them a dinner, as an expression of our good will and fellowship and in a tribute of our high appreciation of their scientific and professional attainments; and be it further

Resolved, that we believe that any community in which they may locate can place every confidence and reliance in their professional skill, honor, and integrity.

Resolved, that a copy of these resolutions be spread on the minutes of this society and a copy be sent to each of the gentlemen, also that copies be sent to the medical press for publication.

The Index Medicus.—Up to Wednesday, Dr. George Thomas Jackson, of New York, had obtained the following additional subscriptions:

Dr. J. D. Bryant.
Dr. Dillon Brown, } (Jointly.)
Dr. C. H. May, }
Dr. J. B. Bissell, }
The Library of McGill University, Montreal.
Dr. M. A. Starr.
Dr. J. A. McCorkle, Brooklyn (through Dr. Winfield).

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending November 9, 1895:*

Brownell, C. D., Assistant Surgeon. Ordered to duty at Puget Sound Naval Station on completion of his examination for promotion.

Curtis, L. W., Passed Assistant Surgeon. Ordered to duty at the Indian Head Proving Ground.

Stokes, C. F., Passed Assistant Surgeon. Detached from the Naval Hospital at Yokohama, ordered home, and granted two months' leave of absence.

Stoughton, James, Passed Assistant Surgeon. Detached from the Puget Sound Naval Station and ordered to duty at the Naval Hospital at Yokohama, Japan.

Wilson, H. D., Assistant Surgeon. Detached from duty at the Indian Head Proving Ground and ordered to duty at the Naval Hospital, Chelsea, Mass.

Society Meetings for the Coming Week:

Monday, *November 18th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York Medical Association; Cleveland Society of the Medical Sciences; Hartford, Conn., Medical Society; Chicago Medical Society.

Tuesday, *November 19th:* New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); College of Physicians of Philadelphia (Section in Ophthalmology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Chemung (semi-annual), Kings, and Livingston (quarterly), N. Y.; Baltimore Academy of Medicine.

Wednesday, *November 20th:* Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

Thursday, *November 21st:* New York Academy of Medicine; Brooklyn Surgical Society; College of Physicians of Philadelphia (Section in Gynæcology); New Bedford, Mass., Society for Medical Improvement (private).

Friday, *November 22d:* Yorkville Medical Association, New York (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society; Cleveland Medical Society.

Saturday, *November 23d:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths.

Married.

Abbott—Tiffany.—In Baltimore, on Wednesday, November 6th, Mr. Gordon Abbott, of Boston, and Miss Katharine McLane Tiffany, daughter of Dr. Louis McLane Tiffany, of Baltimore.

Gondran—McCormick.—In Yazoo City, Miss., on Wednesday, November 6th, Mr. G. A. Gondran and Miss Annie McCormick, daughter of Dr. P. J. McCormick.

Weir—Alden.—In Chicago, on Thursday, November 7th, Dr. Robert F. Weir, of New York, and Mrs. Mary B. Alden.

Died.

Battey.—In Rome, Ga., on Friday, November 8th, Dr. Robert Battey, aged sixty-seven years.

Borst.—In Newburgh, N. Y., on Friday, November 8th, Dr. Elman H. Borst, aged thirty-three years.

Farrington.—In New York, on Friday, November 8th, Mrs. Henrietta B., wife of Dr. J. O. Farrington.

Hill.—In Dover, N. H., on Friday, October 25th, Mrs. Abigail Burnham Shackford, wife of Dr. Levi G. Hill.

Jackson.—In New York, on Sunday, November 10th, Dr. George Follansbee Jackson, aged sixty-eight years.

Pemberton.—In Long Branch, N. J., on Saturday, November 9th, Dr. John C. Pemberton.

Posey.—In New Orleans, La., on Thursday, November 7th, Dr. John Leonard Posey, aged forty-two years.

Rose.—In Salt Lake City, Utah, on Monday, November 4th, Dr. Edward Percy Rose, in the forty-first year of his age.

Zabriskie.—In Brooklyn, on Monday, November 11th, Dr. John L. Zabriskie, in the sixty-fourth year of his age.

Letters to the Editor.

LINEAR ELECTROLYSIS: A NEW PROCESS IN THE TREATMENT OF THE STRICTURES.

New York, *November 6, 1895.*

To the Editor of the New York Medical Journal:

Sir: The following lines are written for the purpose of making known my methods of linear electrolysis in the treatment of stricture in general, such as that of the uterus, the rectum, the œsophagus, and especially the urethra.

I have applied this method for the last fifteen years, and it occupies a notable place in clinical surgery in Europe. It is entirely different from any other process called electrolytic in which an electric olive-shaped instrument (gradually increased in size at each application) is repeatedly introduced into the urethra, producing nothing else but a temporary dilatation. My operation is a true electrolytic urethrotomy, which has all the advantages of urethrotomy without any of its objectionable and occasionally dangerous consequences. It was with the intention of demonstrating this fact that I left my practice in Paris and came here, where I have had the good fortune to be welcomed by a number of prominent physicians of New York.

There are many things to be said in relation to the prostate and to the length of the urethra, as I have already observed in one of my works,* but I will be as brief as possible, not wishing to abuse the hospitality accorded me in using up too much space in the columns of this journal.

The idea of decomposing liquids, as well as the normal and pathological living tissues, by a continuous current of a battery is not a new one, since it dates from the time of Faraday, who gave the name of electrolysis to this destructive action. Much later Ciniselli, of Cremona, made frequent applications of electrolysis in surgery. The electrolytic action of the continuous current on the tissues is an electro-chemical cold process; the disintegration is molecular, which explains the almost complete absence of pain during the operation.

Electrolysis may take the place of the knife in all operations, but its action would be too slow for extensive ones. It is rather indicated for small operations where there is but a small amount of tissue to destroy, as in strictures.

This process works wonders in the treatment of stricture, such as that of the œsophagus, the uterus, the urethra, and the rectum. It has been especially employed in strictures of the urethra.

Formerly urethral electrolysis did not give the results that could be expected from it, because the instruments employed were imperfect. It was, in fact, dangerous to introduce defective instruments into the urethra, on account of the mucous membrane being so delicate.

Since I have constructed my own electrolyser, I may say that I have met with almost constant success in the treatment of strictures. My electrolyser consists of a long, flexible, and slender bougie, in the middle of which a projecting smooth platinum blade (not sharp) is connected with a platinum wire covered with a thin coating of gutta percha. This platinum wire can be put in communication with the continuous current of a battery. The terminal portion of the sound is filiform and serves as a driving bougie, preventing any false passage.

The operation is performed as follows: The electrolyser being introduced into the canal, the platinum blade is gently pressed against the stricture, and the instrument is put in communication with the negative pole of a continuous-current battery. It is admitted by surgeons that a cicatrix produced by negative electrolysis is soft, flexible, and not retractile. Then a metallic plate is placed near the diseased part—at the upper part of the thigh, for example—and connected with the positive pole of the battery.

This being done, the electrolytic current is allowed to pass until the galvanometer indicates ten milliampères (minimum), which is sufficient in nearly all cases. The electrolyser is slowly driven in against the stricture, and the obstacle is generally destroyed in about thirty seconds, which is the average length of time required for the operation. The time naturally varies according to the nature of the stricture. Some strictures which are very soft are destroyed in three or four seconds; others which are hard require two or three minutes; finally, I have seen strictures which were so hard that they could not be treated by electrolysis. I can say, however, that on an average three fourths of the strictures that I have seen have been soft and easily cured by electrolysis.

The electrolyser acts like the urethrotome. It produces a linear division of the stricture, but it has the advantage over the urethrotome of not producing a wound by a sharp instrument. The platinum blade which operates is aseptic, and the operation is scarcely painful and does not frighten the patient. Although I have operated in more than twenty-five hundred cases, I have never met with serious accidents, and I have not lost a patient. After the operation it is useless to place a permanent sound in the urethra, and in the majority of cases the patient may get up and even return to his usual occupation on the day of the operation.

Three days after the operation I pass a bougie into the urethra, the size of which I increase on the following day; that is all. In some cases the patient should pass a bougie every month or every two months. Many patients have been cured without having to use the sound after the operation.

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* *Anatomie descriptive et dissection.* Par le Dr. J. A. Fort, professeur d'anatomie à l'Ecole pratique de la Faculté de médecine de Paris. Cinquième édition, 1892.—*Atlas d'anatomie chirurgicale.* Par le même. Paris, 1892.—*Traitement des rétrécissements par l'électrolyse linéaire.* Par le même. Paris, 1894.

In my work on the subject I have reported many cases which remained cured for five or six years, although the patients had not used the sound after the operation was performed.

My process is rapid, and the operation does not require to be performed more than once, except in very serious cases. The electrolyser destroys the stricture in a line as the urethrotome does, but I repeat here that this process of linear electrolysis has all the advantages of urethrotomy without having any of its inconveniences.

I will conclude by stating that my greatest desire is to be allowed by my American colleagues to prove the advantages and the harmlessness of my process, and it affords me the greatest pleasure to state here that I have already performed successfully several operations at Bellevue Hospital and at the French Hospital, in the presence of a number of leading doctors of New York. J. A. Fort, M. D., of Paris.

PRACTICAL INSTRUCTION IN OBSTETRICS.

Minneapolis, *November 8, 1895.*

To the Editor of the New York Medical Journal:

Sir: In Dr. Painter's address in obstetrics, an abstract of which appears in the last number of the *Journal*, he makes the statement that there are only two institutions that give their students practical instruction in obstetrics. Whether Dr. Painter's statement applies to New York schools or to the medical schools of the United States I do not know, but if the latter he is certainly mistaken. Some of the western schools give their senior students instruction in obstetrics "according to the most advanced views."

At the University of Michigan the graduating class is divided into small sections, and each section is given practical instruction in this branch in the lying-in ward of the university hospital. Thus each student is enabled to see one or more cases of confinement before graduation.

E. S. Strout, M. D.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Seventeenth Annual Congress, held at Rochester, N. Y., Monday, Tuesday, and Wednesday, June 17, 18, and 19, 1895.

The President, Dr. John O. Roe, of Rochester, in the Chair.

(Continued from page 506.)

Some Remarks on Removal of the Tonsils. A Case of Polypoid Lipoma of the Larynx.—Dr. J. W. Farlow read a paper on each of these subjects. (See pages 592 and 610.)

Dr. J. W. Gleitsmann said that he had not had any difficulty in removing tonsils. In a few cases in adults, where he had feared hæmorrhage, he had used the galvano-cautery snare and the irido-platinum wire in connection with the instrument of Dr. Knight. He had found it acted admirably. There was sometimes difficulty in placing the loop over the tonsil. If the tonsil was very large and the amygdalotome was not sufficiently wide to remove it all at once, he always began at the lower end, because this portion was most liable to give rise to subsequent trouble, such as pharyngeal neuroses.

Dr. F. H. Bosworth, of New York, said that he thought if we abandoned entirely the idea that the tonsil was one of the organs of the body, and accepted the teaching that the tonsil was simply a mass of diseased tissue in the fauces, which presented definite clinical indications, the treatment would become quite simple. These clinical indications were to remove the diseased tissue. As regarded hæmorrhage, his own experience had taught him that if we cut into such a hypertrophy in adult life it was going to bleed, and hence he preferred the use of the cold snare. He had made use in his own work simply of an enlarged and strengthened polypus snare, but Dr. Farlow had constructed what was perhaps a better instrument. Guersant had stated that in five thousand amygdalotomies he had never seen severe hæmorrhage, but they had all been in children. The speaker said that neither had he seen severe hæmorrhage in children. The large, rounded, pear-shaped masses occurring in children from eight to twelve years of age, and which fitted so beautifully into the amygdalotome, could be readily removed by that instrument, but those which spread upward and buried themselves beneath the pillars of the fauces, or those cases in which the pillars of the fauces covered more or less of the tonsils, could not be so easily treated. In these latter cases the tonsils must be dug out. A stout steel-wire snare would accomplish this perhaps in the best way, although it would be necessary to remove the tonsil in several pieces. The indication was to remove all the lymphatic tissue. Each case, however, presented an independent problem for treatment.

Dr. Ingals said that there could not be much objection to the cautery or polypus snare for removal of the tonsils if the instrument was sufficiently long and powerful. Some years ago he had had the handles of these instruments made five inches long, which was ample for this purpose. The ordinary polypus snare was not strong enough for the removal of a firm tonsil in an adult, although it would answer well in children. He would like to know how long the reader of the paper required to remove a tonsil with his écraseur. A strong and rapidly cutting snare would certainly be very desirable. He, when removing a tonsil in this way, had had the misfortune of having the wire meet with a concretion, so that it became necessary to break and remove the wire, the patient suffering severely all the time. He was well aware of the danger from bleeding when the amygdalotome was used, for he had seen a number of trying instances of the kind. The bleeding had generally occurred in cases where the tonsils were so small as not to require removal at the time of the operation, but where the operation had become necessary because of frequent inflammation. He had not been able to anæsthetize the parts sufficiently with cocaine to relieve the pain, except for a very rapid operation. In removing the tonsils by the snare in children it was important to have a forceps with which they could be drawn out so that the snare could secure a firm hold. If the tonsil was adherent to the anterior pillar of the fauces, this must first be separated and then the tonsil drawn out sufficiently to permit the instrument to secure it completely.

Dr. Carl Seiler, of Philadelphia, said that the author had pointed out the fact that we had frequently to deal with a sort of fibrous degeneration of the inflammatory product of this abnormal deposit of lymphatic tissue which we called the tonsil. It was for these tonsils that a strong écraseur was needed. In children, where the tissue was still soft, consisting of nothing but lymphoid cells, the mass could be easily removed with the ordinary polypus snare. Regarding the use of Mathieu's guillotine in cases in which the tonsil was so large that it would not readily include the tonsil, he said that this objection to the instrument was due to its faulty construction. It was a mechanical absurdity to make the opening of the instrument as it was ordinarily made. By simply turning the ring on its long axis it became an easy matter to introduce the instrument. A "*steel*" tube would be abundantly strong enough for any kind of steel wire, and hence if the écraseur were properly made of steel and not, as was often the case, of German silver, it would be sufficiently strong to withstand the strain upon it.

Dr. Mulhall said he merely wished to emphasize a point mentioned by Dr. Ingals, and one which was very generally neglected by the general profession—viz., the importance of separating the adhesions existing between the anterior pillars of the fauces and the tonsils. Mothers frequently asked if these tonsils would return after they had been cut out, and his reply was that they would not return if the tonsils were *properly* cut out. The trouble was that many operators neglected to separate these adhesions.

Dr. Daly said he was of the opinion that there had been more bad surgery done upon the tonsils than upon any other part of the human body. He had endeavored to study whatever might be the use or functions of the tonsils for many years, and he had come to the conclusion that they formed no part of the normal throat. He believed this opinion would become generally accepted by careful observers. All tonsils which projected beyond the pillars of the fauces should be removed. Such a tonsil served no good office in the economy, and its removal would add to the patient's comfort, well or ill. The method described in the paper was certainly an excellent one to employ in particular cases, as in "bleeders," but we were all more or less creatures of habit, and he had been in the habit for many years of using the Mackenzie amygdalotome. But with this instrument the operation was often not thoroughly done. It left an unsightly stump frequently, and he had used probe-pointed knives and forceps for rendering the stump of the tonsil smooth, and also dissecting out the ragged portions of the tonsil piecemeal after abscission with the Mackenzie amygdalotome, especially for freeing the tonsillar tissues from the half arches.

He wished to be placed on record as saying that the man who pinned his faith to the statement that there was no danger of hæmorrhage in amygdalotomy would sooner or later meet his Waterloo. Such an individual deserved to meet this fate for relying upon worthless statistics. Personally, he had had several cases of alarming hæmorrhage. In one of them the patient had nearly died, and he had found himself in a very awkward predicament to say the least. He had made an appointment to remove the tonsils from a farmer's son, but learned on his arrival that the boy was out on the farm. He went out and met the boy in the woods, and did the operation then and there. The result was that he had to spend several hours with his fingers in the patient's throat to arrest the hæmorrhage.

Dr. Casselberry said that he had had enough cases of serious hæmorrhage after amygdalotomy to make him cautious and somewhat anxious about every patient operated upon with the amygdalotome. And he was not sure that such hæmorrhages might not occur in children. He had not had any serious result of this kind in his own practice among children, but he had elsewhere reported a case of fatal hæmorrhage after amygdalotomy occurring in the practice of a friend by whom he had been told the details for the purpose of publication. The operation had been done on a child of three years in the ordinary manner with an amygdalotome. The bleeding had apparently stopped, and the physician had left the house, but had been hastily summoned several hours later, found on his arrival the child very much exsanguinated, and, in spite of efforts to stop the hæmorrhage, the child had died in a few hours. There was no history in this family of any member having been a "bleeder." Inasmuch as it was the most painless method of removing the tonsil, he was accustomed to use the amygdalotome, but he did not employ it unless he had the galvano-cautery apparatus at hand for the purpose of checking any serious hæmorrhage that might occur. He recalled a case in his office in which the blood had spurted from a vessel as large as a knitting-needle, in which, with the aid of an assistant and by rapid sponging, he had been able to see and cauterize the bleeding vessel. He did not like to use the amygdalotome for the large fibrous tonsils. In these cases he had generally employed the galvano-cautery snare, although on several occasions he had substituted the cold snare, as recommended by Bosworth and others. These patients had complained bitterly of the pain, and there had been considerable swelling afterward. He could not say that the swelling and soreness had been any less than where he had used the galvano-cautery snare. This snare should be skillfully applied, and care taken not to burn the muscular pillars of the fauces. With a specially constructed volsella he was accustomed to draw out the tonsil, no matter what plan of removal was adopted. The separation of the pillars from the tonsil had given him a great deal of trouble. Sometimes they were very adherent, and in children the dissection was almost impossible. When he had been sure that the muscular part was adherent, he had been particular to separate the adhesions, but if, as often happened, there was simply thickened mucous membrane reflected from the pillar over part of the tonsil, he had not felt called upon to carry out this dissection, but cut it through together with the tonsil.

Dr. Shurly said that he had had two very serious cases of tonsillar hæmorrhage occurring in children. It was important to first estimate the nature of the tissue composing the tonsil to be removed. With the "scirrhous" tonsil, it was well known, there was always danger of hæmorrhage. It was better, as a first step, to feel of the tonsil and ascertain whether it was soft or hard. If the tonsil was hard, there could be no question about removing it with an écraseur or the galvano-cautery. He had only used the snare described by Dr. Farlow on two or three occasions, and had then found it a very tedious process, involving the prolonged use of an anæsthetic, for, if an anæsthetic was dispensed with, there would be a good deal of muscular excitement of the throat. In his experience, it had been sufficient to take away only enough of the projecting portion to relieve the mechanical obstruction and the pressure and irritation produced. He had never seen any serious hæmorrhage from the use of the guillotine, or from the volsella and knife, with the above-mentioned exceptions. He had learned by former mistakes not to puncture the crypts directly when using the galvano-cautery, but to make the punctures diagonal to these crypts. Very often only two sittings would be required for reducing even very large tonsils. The object of the treatment was to destroy the lymph spaces by substituting a local acute inflammation for an old and chronic one. The nutrition and absorption of the organ would be most favorably affected by making these punctures diagonal to the direction of the crypts. The puncture directly into the crypt only served to increase the obstruction by agglutination of its walls. In cases where there was elongation of the tonsil, the elongation was generally downward. In such cases he had used the snare preferably.

Dr. Daly said that a little instrument had been described to him for arresting hæmorrhage from the tonsil. It consisted of a pair of rings on a handle, with a spring, and was intended to make pressure on the throat laterally.

Dr. Newcomb said that an instrument on this same principle had been presented to the New York Academy of Medicine by Dr. Butts.

Dr. T. Morris Murray, of Washington, D. C., referred to a case where the patient had nearly bled to death, and in which the hæmorrhage had been promptly arrested by pressure made with the instrument devised by Professor Störk for arresting hæmorrhage in such cases.

Dr. **Coolidge** said that the pain produced was the principal objection to the cold snare. This instrument removed the tonsil more satisfactorily than the tonsillotome and, of course, produced less hæmorrhage, but the pain, both during the operation and afterward, was much greater.

Dr. **Farlow** said that serious, even if not alarming, hæmorrhage sometimes occurred in children after amygdalotomy. He had seen children with enormous tonsils which could not be removed by the ordinary polypus snare, which was certainly too weak for that kind of work. An important advantage of the écraseur was that the loop could be made of the size and shape of the tonsil, and in cutting through it constricted nearer the base of the tonsil than the amygdalotome did, so that less was left behind. He referred to specimens which he had that showed entire removal of tonsillar tissue. There was certainly more pain than with the amygdalotome, but the hæmorrhage had been practically nothing.

(*To be continued.*)

Book Notices.

A Handbook of Medical Diagnosis for Students. By James B. Herrick, A. B., M. D., Adjunct Professor of Medicine, Rush Medical College, etc. With Eighty Illustrations and Two Colored Plates. Philadelphia: Lea Brothers & Co., 1895. Pp. x–13 to 432. [Price, $2.50.]

This book belongs to a class which it is too commonly the custom with reviewers to damn with faint praise or to condemn *in toto*. The ordinary criticism speaks of such books as tending to superficial work because of their too great brevity, condensation, and dogmatic statements. With regard to some the criticism is just, with regard to others it is unfair, because the object of the author is not taken into consideration. The active practitioner who would be satisfied with a comparatively brief handbook must be made of poor intellectual stuff. For the student the story runs differently. To set a beginner in medicine at the study of an encyclopædic work, containing a full and many-sided discussion of facts and theories, is absurd and directly conducive to mental bewilderment. He needs the main outlines, somewhat dogmatically stated, to form a framework for the support of further material, which will later be worked into form and clothed with detail.

Dr. Herrick states explicitly that his book is intended chiefly for students, that he has striven to present the main facts of his subject, and has endeavored to stimulate his readers to further study in larger works and current literature. Bearing this in mind, it is a pleasure to say, after a rather careful examination and comparison, that this volume accomplishes its object more thoroughly and completely than any similar work yet published.

The book opens with the usual introductory considerations. We note with approval the emphasis laid upon the necessity of a careful and thorough physical examination at least once in each case, and upon the occasional overlooking of important facts caused by not allowing the patient to tell his story in full. After the ten pages of introduction the bulk of the book is taken up with sketches of special forms of disease. The separate titles number about two hundred and fifty. Good judgment is displayed in the allotment of space to each, the commoner ailments being treated of with sufficient fullness, while the rarer forms are by no means ignored. The condensation has been well done, the main outlines are prominent, and subsidiary facts are fairly stated. Each section devoted to diseases of special systems is preceded by an exposition of the methods of physical, chemical, and microscopical examination to be employed in each class. The technique of blood examination, including color analysis, is very clearly stated. The differential tables in connection with the anæmias and leucæmias will prove useful and convenient. Uranalysis receives adequate space and care. The author does not profess more than he has accomplished in presenting the main outlines of medical diagnosis. To stimulate research and study the student is frequently admonished that his work must not be limited to the present volume, and references to more exhaustive books are not lacking.

The author's style is good, and at times has an epigrammatic flavor, as when he speaks of the "digitally diligent accoucheur" in connection with septicæmia.

The illustrations are well chosen, but not overabundant in these days of generous publishers. The two colored plates represent respectively the *Hæmatozoon malariæ* and the appearance of stained blood in the leucæmias. Type, paper, and binding are good. Some typographical errors have crept in, such as "phenomana," "tuberular" for tubercular, and "chagrinned" for chagrined.

Altogether the volume is deserving of high commendation.

Medical Diagnosis with Special Reference to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases. By J. M. Da Costa, M. D., LL. D., President of the College of Physicians of Philadelphia, etc. Illustrated with Engravings on Wood. Eighth Edition, revised. Philadelphia and London: J. B. Lippincott Company, 1895. Pp. 3 to 1104. [Price, $6.]

It is always a pleasure to greet a new work on medical diagnosis, if it is a good one, or to receive a new edition of a well-tested older treatise. Accurate diagnosis, constituting as it does the prerequisite of successful treatment, is of such supreme importance that no worthy contribution can be considered superfluous. Although the facts and methods of clinical medicine are common property, yet in passing through the mental alembic of each writer they undergo modifications in arrangement and manner of statement which may prove of great value. Confronted by obscure or puzzling symptoms, the physician who properly studies his cases will be ofttimes rewarded for a diligent search through the works of various authors by finding in one a happy statement, a diagram, a table, or a suggestion not found elsewhere which will throw light upon his darkened way. Moreover, a new book, or a late edition, if up to date, will contain knowledge which before existed only in periodical and perhaps inaccessible literature.

Like an old friend in a new dress, with increased stature and dignity comes the eighth edition of Da Costa's *Diagnosis*. The lapse of time since the first edition, which appeared in 1864, is sufficient to entitle it to a place among the medical classics. It possesses also many of the characteristics which belong to the older writers. There is a certain courtliness and deliberation in the manner of its phraseology which are reminiscent of the days prior to the use of instruments of precision in clinical work. When, as in the present case, the reader finds the ripe experience of years united to an appreciative adoption of modern methods, the resultant is bound to be satisfactory in the extreme. Its worth is further proved by the fact that it has been translated into German, Spanish, and Italian.

A detailed review of this well-known book is quite unnecessary. In general, a comparison of the eighth edition with the sixth (1884), which happens to be at hand, shows many additions and changes. The total number of pages is increased by one hundred and fifty. The largest percentage of increase is in diseases of the nervous system, the next is in diseases of the blood. "Appendicitis" is largely responsible for the increased space devoted to abdominal diseases. The advances in bacteriological knowledge are responsible for some additional pages. The index covers thirty-eight instead of eighteen pages, a desirable thing for those who value their time.

There are ninety-four illustrations, against sixty-eight in the older edition. The larger representation is due mainly to cuts illustrating clinical apparatus, temperature charts, and micro-organisms.

The original classification of diseases and symptoms with reference to clinical convenience rather than their scientific and pathological relations remains unchanged. From a practical and clinical point of view, it is by far the best. Disease must be approached at the bedside through the guidance of the symptoms encountered; this, of course, is a truism. Nevertheless it is a distinct advantage which must be insisted upon to find, for example, a heading, Disorders in which Morbid Discharges from the Bowels occur, and grouped under it Diarrhœa, Dysentery, Intestinal Hæmorrhage, and Fatty Diarrhœa. It is obvious that this heading and many others of a similar character constitute guide posts of value in pointing toward the nature of a given case.

For this and numerous other reasons this book is indispensable to the library of the medical clinician.

BOOKS, ETC., RECEIVED.

An American Text-book of Obstetrics for Practitioners and Students. By James C. Cameron, M. D., Edward P. Davis, M. D., Robert L. Dickinson, M. D., Charles Warrington Earle, M. D., James H. Etheridge, M. D., Henry J. Garrigues, M. D., Barton Cooke Hirst, M. D., Charles Jewett, M. D., Howard A. Kelly, M. D., Richard C. Norris, M. D., Chauncey D. Palmer, M. D., Theophilus Parvin, M. D., George A. Piersol, M. D., Edward Reynolds, M. D., and Henry Schwarz, M. D. Richard C. Norris, M. D., Editor. Robert L. Dickinson, M. D., Art Editor. With nearly Nine Hundred Colored and Half-tone Illustrations. Philadelphia: W. B. Saunders, 1895. Pp. 8 to 1009. [Price, $7.]

The Pathology and Surgical Treatment of Tumors. By N. Senn, M. D., Ph. D., LL. D., Professor of Practice of Surgery and Clinical Surgery, Rush Medical College, etc. Illustrated by Five Hundred and Fifteen Engravings, including Full-page Colored Plates. Philadelphia: W. B. Saunders, 1895. Pp. 5 to 709. [Price, $6.]

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Geschichte der jüdischen Aerzte. Ein Beitrag zur Geschichte der Medicin. Von Dr. Richard Landau. Berlin: S. Karger, 1895. Pp. 7 to 144.

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Investigations concerning Infectious Diseases among Poultry. By Theobald Smith, Ph. B., M. D., and Veranus A. Moore, B. S., M. D., under the direction of Dr. E. Salmon, Chief of the Bureau of Animal Industry. Washington: Government Printing Office, 1895. Pp. 7 to 90. [United States Department of Agriculture, Bulletin No. 8.]

Transactions of the American Otological Society. Twenty-eighth Annual Meeting. Vol. VI, Part II.

A New and Simple Method by which Cautery Irons may be Electrically Heated almost Instantaneously. By W. Scheppergrell, M. D., of New Orleans. [Reprinted from the *Medical News.*]

A Curious Case of Appendicitis; with a Discussion of Certain Points in Operative Technique. By Robert H. M. Dawbarn, M. D. Read at a Meeting of the New York Surgical Society, April 10, 1895.

Hyperthermy in a Man up to 148° F. (64·4° C.). By A. Jacobi, M. D. [Reprinted from the *Transactions of the Association of American Physicians.*]

A New Method of Bandaging the Thumb. By Julius Selva, M. D., of Boston. [Reprinted from the *Medical News.*]

Experimental Cachexia Strumipriva (Thyreoidectomica). By Wesley Mills, M. D., of Toronto. [Reprinted from the *Canadian Practitioner.*]

Rheumatism: Its Pathology and Modern Treatment. By E. S. Pettyjohn, M. D., of Alma, Mich. [Reprinted from the *Medical Fortnightly.*]

New Inventions, etc.

A NEW SYRINGE FOR TREATING EPISTAXIS, ETC.

By Herman L. Armstrong, M. D.,

SURGEON TO THE CENTRAL THROAT HOSPITAL, BROOKLYN.

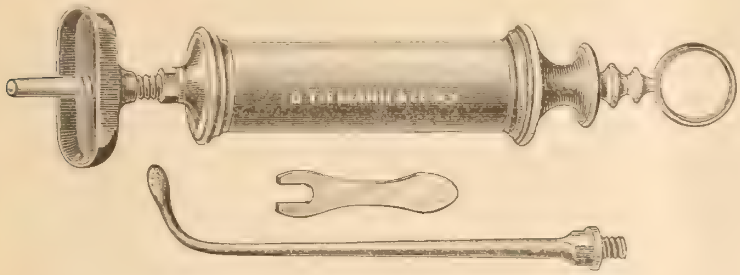
In the treatment of epistaxis there is probably no remedy that will give such general satisfaction as hot water.

It is a good plan to start by using the water lukewarm, injected with a syringe (such as described in the accompanying cut) through the nostril upward and backward, allowing it to escape from the opposite nostril into an ordinary pus basin, and gradually increasing the heat of the water until it is made as hot as can be borne by the patient. This is, as I believe, the most thoroughly antiseptic treatment that can be given, and is most satisfactory from the standpoint of results.

The same may be said of atrophic rhinitis. Hot water injected at regular intervals of perhaps every other day, or possibly once a day, will, if followed up persistently, give more relief than probably any other remedy that can be suggested. The irrigation of the parts and the heat have a tendency to arouse the natural action of the parts and to restore the nerve supply and circulation.

Objection to syringing the nose has been based upon the fact that there is danger of flooding the Eustachian tubes and thereby bringing about middle-ear trouble, mastoid abscess, etc., as sequelæ. An experience of several thousand cases has led me to believe that the danger is comparatively small, as I have yet to meet with my first case.

The syringe (a cut of which is herewith given) is no improvement over the ordinary syringe further than that the adjustable shield makes the work of syringing the nose free from the danger of the water and secretion discharging from the opposite nostril going entirely over the basin, either upon the patient's or physician's clothing or carpet. It is made with an adjustable and self-lubricating piston, which insures perfect working order at all times. It is put together in sections with screw joints, and may be taken apart at pleasure for the purpose of rendering each individual part aseptic. It is practically indestructible. Such a syringe, I think, will be highly useful from the fact that its shield can be adjusted to meet the wants of each individual patient.



In addition to the other advantages of this syringe, it is supplied with a postnasal tip, which, with the extra large barrel of the syringe, makes it capable of cleansing any postnasal cavity in the child or adult, be the cavity large or small.

It is manufactured by George Tiemann & Co., Park Row, N. Y.

135 Clinton Street.

Miscellany.

A Novel Method of Performing Major Operations within the Nasal Cavities.—At a recent meeting of the Philadelphia County Medical Society Dr. Carl Seiler read a paper on this subject in which he stated that, for a number of years, he had avoided as much as possible the employment of general anæsthesia as cumbersome and unpleasant to both the patient and the operator, and in the majority of cases requiring but slight surgical interference and in the performance of the minor operations, such as galvano-cautery, removal of polypi or ecchondroses, extirpation of the pharyngeal tonsil, and even straightening of the nasal sæptum, he had found cocaine, properly applied for a sufficient length of time before the operation, to answer all purposes. This local anæsthesia had the inestimable advantage, in these by no means simple or easily performed operations, of securing for the operator the co-operation of the patient by not rendering him unconscious; the patient, thus being enabled to remain in the upright position, the usual one for examination, throughout the operation, could dispose easily, and without inconvenience to the operator, of any flow of blood, so that the operation need not be interrupted by any slight hæmorrhage; and, what was of even greater importance, the topographical position of the parts in relation to the body of the patient, to the operator, and to the source of illumination remained the same as in an ordinary examination of the nasal cavities, the knowledge of which relative positions, by long practice, had become, so to speak, automatic on the part of the operator, so that they were not consciously thought of by him during the operative manipulations if unaltered.

In those cases, however, said the author, in which the major operations within the nasal and oral cavities, such as the removal of fibroid polypi in the postnasal or nasopharyngeal cavity, of sarcomatous tumors, or of benign tumors invading the adjacent cavities, and of necrosed bone in the posterior nasal chambers, and the extraction of large rhinoliths or impacted and incrusted foreign bodies, etc., were necessary, cocaine or any other purely local anæsthetic was not applicable, because the site of operation could not be reached with the cocaine solution, and because the extent of surface to be anæsthetized was either too extensive or altogether unknown to the operator before the operation, and general anæsthesia must of necessity be resorted to in order to keep the patient submissive and quiet, besides rendering the surgical procedure painless. Under these circumstances it became necessary to place the patient in a recumbent posture, which at once put the operator at a disadvantage, because, in the first place, it altered the topographical relation of the parts to the operator, put adequate illumination of the nasal cavities out of the question altogether or made it extremely difficult, and, what constituted the greatest objection, allowed the blood to flow into the larynx and pharynx unperceived by the operator and in such quantities as to endanger the life of the patient by suffocation if he was placed in the usual posture—either on his back or on his side. This latter difficulty was usually obviated by plugging the postnasal cavity prior to the administration of the general anæsthetic if the operation was to be undertaken in either of the anterior nasal chambers, or by a preliminary tracheotomy and plugging of the superior laryngeal cavity if the nasopharyngeal cavity had to be invaded during the operation, thus making it much more tedious and inconvenient to both operator and patient in the first instance and, in the second, increasing the risk to life to a very great extent.

For a number of years past the author had adopted a method which obviated the difficulty of blood running into the larynx and pharynx, and so did away with the necessity of preliminary tracheotomy or plugging of the posterior nares, and it had proved so efficient in a large number of instances that he felt justified in making public mention of it, as it had been thoroughly tested.

This method was very simple, and consisted in placing the patient, after thorough anæsthesia, upon the operating table in a ventral recumbent posture, with the head projecting, face downward, over the edge of the table.

The head was supported in a horizontal position by the hand of an assistant and by placing a bandage around the forehead, the loose ends of which were secured to a band around the waist of the patient, or, better still, to a rigid support above the head of the table. In this position the flow of blood occasioned by the operation found vent through the nostrils and mouth, and none of it found its way into the larynx.

Of course, the topographical relation of the parts to the posture of the patient was an entirely different one from that we were accustomed to in the ordinary upright posture, but not much more so than when the patient was in the prone dorsal or lateral posture, and with a little practice on the part of the operator this difficulty was soon overcome.

In order to obtain sufficient illumination, an ordinary looking-glass or a concave reflector was placed upon the floor underneath the patient and secured in such a position that it would reflect light from any convenient source, a window or gas-jet, into the nasal cavities. As a rule, in such operations Dr. Seiler depended upon the sense of touch rather than upon that of sight, but if it became absolutely necessary to see any particular portion of the nasal chambers which could be seen during the operation, he adopted the very simple expedient of lying upon his back under the table, which brought him again into the same relation to the patient's nasal cavities that he had been in when the patient had been sitting conscious on the examining-chair, and thus the topographical relations were restored, under somewhat inconvenient circumstances it was true, to the normal and accustomed ones.

The author stated that he had performed major intranasal operations with the patient in the posture described, and had been greatly pleased not only with the freedom of motion which it gave to the operator for his manipulations, but also with the ease of mind and freedom from anxiety lest blood should choke the patient, in spite of all precautions to prevent such an accident, which had to be instituted in the old method of the dorsal recumbent posture, even with the head extending beyond the edge of the table and hanging down.

Acute Cocaine Poisoning.—At the same meeting Dr. M V. Ball related a case of acute cocaine poisoning in which, he said, there were several interesting points to be noted. The patient was a woman, thirty-five years old, who had suffered for ten years from rectal stricture. She had been accustomed to use cocaine locally in the rectum, and, being tired of living, had resolved to end her life by swallowing twenty-five cubic centimetres of a five-per-cent. solution of cocaine, which was equal to about eighteen grains and a half of the alkaloid.

The dryness in the throat had been speedily produced, and in attempting to get up from her couch to ring for the servant she had felt dizzy and had fallen to the floor. A young medical student living in the house, summoned at once, had found her in a raging delirium. She had wanted to throw herself from the balcony. She had talked loudly, incessantly, and incoherently. She had been restrained by physical means, and when the student had endeavored to give her a hypodermic of morphine she had resisted, and would not allow him to do so; he had then persuaded her to take the tablets by the mouth, and so a third of a grain had been administered. About half an hour after that Dr. Ball had seen the patient. She was held down on the bed by her friends, and was gesticulating wildly, yet had been able to recognize him as soon as he entered the room, and appealed to him for help. She had been released, and immediately rushed for the open window to fling herself out.

Her pupils had been widely dilated and the pulse hardly perceptible and very frequent. The tongue would be protruded spasmodically, and the teeth gritted together in a tetanoid manner. She talked incessantly. In a few minutes the author had been able to gain control over her without using physical restraint; and, although she talked irrationally at times, her delirium was less marked, and she told Dr. Ball that she was not going to get over the effects, and she would not allow him to give her an antidote; in the next breath she would ask him to listen to her singing or recitation. Having frequently looked at her hands, they appeared dirty to her, and she would rub them. Her tongue had been much congested, bluish, and anæsthetic. Her throat had been very dry; other parts of the body which had been tested superficially had given no indication of anæsthesia.

The respirations were normal; the temperature was normal; the pulse, when counted, was 140. She stated that she felt glorious, never so happy before. She wanted to drink champagne, and when it was brought to her forgot that she had asked for it. Delusions of persecutions were present to a slight degree, and her most intimate friend was accused of treachery and underhandedness. She was desirous of moving around, and wanted to leave the house and visit a place she had not thought of for many years. Gradually a feeling of tiredness supervened, talk became less lively, bodily sensations were now complained of, and especially great thirst, which water or ice had no power to quench. Lemon and vinegar applied to the lips was tasted, showing that the sense of taste was not entirely absent.

The pulse remained very frequent and small. The author had been able to administer black coffee and lukewarm water, and thus induced free emesis. At that time, two hours after the cocaine had been swallowed, the patient was resting quietly, with her pulse stronger, but still rapid. Thirst was extreme, and in attempting to go to the bath-room she found her legs almost useless. Urine had been passed. A thirtieth of a grain of strychnine was administered by mouth, and some champagne was given. Perspiration had started on the skin, and the former pallid condition of the face changed to a slight glow. Four hours after the initial onset the patient was sleeping soundly, and the pulse had gone down to 100, but was much stronger. Consciousness had entirely returned, but there had been no recollection of time and little of previous events. The next morning she was very weak, her body felt bruised and her limbs heavy and almost useless. Fæces and urine had been passed without trouble. There was no appetite. The tongue and throat were much parched, and thirst was still present. Congestion of the tongue had gone, and normal sensations had returned.

A history of a previous overdose was obtained. The alkaloid in a dry state had been taken by mistake, and an active delirium much worse than the one just recorded had occurred. Morphine had been administered in large quantities at the time.

Very few cases, said Dr. Ball, were on record of recovery from so large a dose as the one taken in this case, and in a case where twenty-two grains had been given by mistake by the mouth the patient had died almost immediately.

In this case there had been no interference with the urine. The urine was often suppressed; other secretions, such as those of the mammary and submaxillary glands, had been noted as likewise affected by toxic doses.

Maurel thought that death was due to destruction of the leucocytes. Their dead bodies were supposed to collect in the capillaries and form embolic processes.

Reclus held that thrombi formed in the veins, and that when death occurred after an injection under the skin it was due to the penetration of a small vein.

This, said the author, would hardly account for the deaths happening after the drug had been thrown into the urethra or been swallowed.

As to treatment, he could not, he said, offer anything suggestive. Morphine had been looked upon as antagonistic, and had been given in the majority of cases recorded where symptoms of collapse were present early, with tetanic convulsions and cyanosis. Nitrite of amyl was indicated.

Where the heart's action was weak, stimulants, strychnine hypodermically, alcohol, ammonia, and ether had all been suggested and tried.

The early administration of a third of a grain of morphine had probably influenced the course in the case described, but recovery was often rapid without any treatment.

As the poison was eliminated rapidly by the urine and the skin, said Dr. Ball, the free action of these organs was desirable, especially as there was a tendency for them to be less active than usual.

While the dose of cocaine could not be said to have any well-defined limits, several clinicians, among them Hänel and

Decker, believed that half a grain, hypodermically administered, should be the maximum dose.

Œsophagostomy for Stricture.—At another meeting of the same society Dr. John B. Roberts related a case of œsophagostomy for cicatricial stricture. The patient, a boy three years and a half old, had swallowed, three months before the author saw him, a quantity of lye, and stricture of the œsophagus had resulted. It was said that a month before he had come under Dr. Roberts's observation a rubber catheter could be passed through the contracted portion of the gullet. Upon examination, the child was found greatly emaciated and very weak. The author attempted to pass a flexible catheter down the œsophagus, but even the smallest was arrested by a constriction at its upper part. A whalebone filiform bougie was, however, pushed downward without much difficulty and apparently passed through the contracted portion of the tube.

As the child was evidently starving to death, Dr. Roberts determined to operate upon him. His first intention had been to do a gastrotomy. The bougie passed down the œsophagus from the mouth would, he thought, have enabled him to draw a strong ligature from the stomach upward through the stricture. This would have been used to cut the stricture, as in Abbe's string-saw method. Careful examination of the patient, however, convinced the author that the contraction was situated at a point sufficiently high to enable him to open the œsophagus below it. He accordingly performed œsophagotomy by making an incision along the anterior edge of the left sterno-mastoid muscle. He opened the œsophagus a little below the level of the cricoid cartilage and introduced a No. 12 soft-rubber catheter into the stomach. The edges of the œsophageal wound were then stitched to the skin and the catheter was allowed to remain for the introduction of liquid food into the stomach. There had been some difficulty in identifying the œsophagus, which was necessarily small, because of the character of the lesion and the position of the thyreoid gland. The left lobe of the thyreoid gland extended to a higher level than the top of the larynx.

About half an inch above the first œsophageal incision Dr. Roberts made a second opening into the œsophagus above the seat of constriction, and passed a rubber catheter upward into the mouth. Between these two openings the œsophageal walls were largely cicatricial. He endeavored to dilate or lay open this portion of the tube, but was not successful. The point of a forceps, introduced into what seemed the calibre of the œsophagus, when forced upward, passed backward behind the wall of the pharynx. The child's condition was so bad that the author did not care to prolong the etherization while he endeavored to lay open or cut away the cicatricial tissue, and he accordingly determined to postpone further operation until the child could be nourished for a few days through the catheter used to convey liquid food into the stomach. The catheter, which had been introduced into the portion of the œsophagus above the stricture and protruded from the mouth, was withdrawn.

The child was fed on peptonized milk and stimulants in small quantities, but did not seem to rally well. On the tenth day a purpuric spot about four inches in diameter appeared upon the abdomen. This subcutaneous hæmorrhage increased, the child became weaker, and died on the sixteenth day. It had been impossible to keep the seat of operation aseptic, because food and mucus had contaminated the wounded surfaces notwithstanding the greatest care on the part of the nurse. Frequent washing of the part with mild antiseptic solutions had therefore been maintained. The post-mortem examination had shown that about three inches of the œsophageal walls had been almost entirely destroyed by suppuration. This had rendered it difficult to preserve the connection between the upper and lower portions during removal of the specimen. The bodies of the vertebræ at this point had been exposed, and the intervertebral cartilages loosened. Some of them could have been easily removed by picking them out with forceps. The spaces between the loosened cartilages and the bones had been filled with a dark, foul-smelling pus. There was an area of consolidation about the root of the right lung, posteriorly; incision into this portion of the lung showed it to contain material similar in appearance and of the same odor as that in the region of the wound.

The life of this child, said the author, could without much doubt have been saved if a surgical operation had been undertaken when it had been possible to introduce a catheter through the constricted portion of the œsophagus. The fact, said Dr. Roberts, that he had been still able to get below the seat of stricture at the time of operation made him feel pretty confident that systematic dilatation, either with or without an œsophageal opening made below the seat of stricture, would have effected sufficient distention of the lumen of the tube to permit of successful feeding.

The suppurative inflammation in the posterior mediastinum which had occurred had been largely due, he thought, to the difficulty of keeping the wound aseptic and to the somewhat extensive disturbance of parts which he had made in identifying and incising the œsophagus at the bottom of the operative wound. This complication would almost certainly have been avoided, he said, if he had adhered to his original intention of opening the stomach and cutting the stricture with a string-saw. It had seemed to him, however, that there would be less risk to the patient in making an opening in the cervical region into the œsophagus, and cutting through the stricture with a string or other device. Curiously enough, however, after he had made the opening into the œsophagus, he had not been able to get the filiform bougie to pass through the strictured tissue and appear in the calibre of the opened gullet. It was possible, he said, that the filiform bougie, which he supposed he had passed through the stricture into the stomach two days before the operation, had not gone down the œsophagus. It might have perforated the wall at the stricture, entered the posterior mediastinum, and been the real origin of the inflammation of the mediastinal tissues found at the post-mortem examination.

A Deserved Tribute to Dr. John S. Billings.—The *Hospital*, an English journal, says:

"On October 1st Lieutenant-Colonel and Deputy-Surgeon-General Billings voluntarily retired from the United States Army after thirty-four years' service. There is no member of the medical profession in the English-speaking world who is more widely known, admired, and honored by his professional brethren and by scientists generally than Dr. John S. Billings. He holds the degrees of five universities, including those of Edinburgh, Harvard, Munich, and Oxford. His life's work has been the establishment and completion of the Army Medical Museum and Library at Washington, and the preparation and publication of the *Index-Catalogue of the Library of the Surgeon-General's Office, United States Army*, which are monuments to his energy, capacity, and devotion. All who have seen that museum must recognize that it is on the whole probably the most complete and the best arranged in the world. No one who has visited it can have failed to have been impressed with a desire to master the system upon which it has been built up, the aims of its founder, and the comprehensive character of the plan upon which it has been developed. The *Index-Catalogue* has now been completed, although the final volume has not yet been issued from the press. It represents an amount of learning, knowledge, capacity, and grit on the part of its author which has deservedly won for him a first place among men of letters all the world over. The *Index-Catalogue* contains a bibliography of authors and subjects so complete and comprehensive that any one engaged in research must perforce refer to its pages, because he will there find precise and full information which must spare him an immensity of labor, and render it possible for researches to be conducted which, previous to the publication of this gigantic work, were almost, if not quite, impossible.

"Dr. Billings has been a prolific writer upon many subjects, including medical literature, hospitals, vital statistics, hygiene, and kindred topics. The addresses he has delivered at the International Medical Congresses and elsewhere have won for him wide and deserved fame. As the designer of the Johns Hopkins Hospital, Baltimore—probably the finest hospital in the world—he has shown how a hospital building can be made perfect in every department, and how it can be organized so as to yield the maximum of good to the patients, to science, and the world of medicine. For more than half a lifetime Dr. Billings has been identified with Washington life, and, in conjunction with his wife, a lady of special charm and social distinction, has done infinite good in a multitude of ways in the capital city of the United States. It must be a satisfaction to Dr. Billings to know that in every part of the world where great minds are engaged in scientific research there he is honored and respected to an extent which is almost, if not quite, unique.

"On Monday next Dr. Billings will assume the chair of hygiene and the directorship of the Laboratory of Hygiene of the University of Pennsylvania. It is scarcely twenty years since the first separate institution of this kind was established for hygiene, and at the present time there are not more than a dozen such laboratories specially built and fitted for that purpose in existence throughout the world. Of these the best known is probably that of the University of Munich, under the direction of Professor Pettenkofer, while the largest is that of Berlin. This Laboratory of Hygiene at Philadelphia has been specially designed by Dr. Billings, and bears the marks of the thoroughness with which he carries out every project to which he sets his hand. He has not only provided most complete and modern apparatus for the study of bacteria and microzoa, and of their development, products, and effects, but also the means for chemical investigations of air, water, food, sewage, secretions and excretions, and the products of bacterial growth; the examination of drinking waters and the effects of various impurities in waters; the effect of working in compressed air; the air of school and other rooms; the dust and germs of the air, its changes by respiration and by ventilation; the adulterations, preparation, and preservation of foods and drinks; the investigation of various soils; the effects of clothing, the various kinds of lighting, heating, etc., and methods of disinfection under varying conditions. In addition to this the drainage of the laboratory is on a double system, and is so arranged as to permit of the trial of new forms of traps, sinks, closets, etc. Such are a few of the many important subjects which will be studied and elaborated under Dr. Billings's direction at the new laboratory of Philadelphia. Dr. Billings has already done magnificent work, but the new field of research upon which he is about to enter must afford him opportunities for valuable service to science of which he is certain to take the fullest advantage. All honor to Dr. Billings and to the great nation of which he is so distinguished a member. In offering him our congratulations upon the completion of the *Index-Catalogue*, we welcome him with heartfelt cordiality at the commencement of his new labors, which can not fail to be attended by important results for the well-being and welfare of the world."

Posture in its Relation to Surgical Operations under Anæsthesia.—At a recent meeting of the Royal Medical and Surgical Society, a report of which appears in the *British Medical Journal* for October 26th, Dr. F. Hewitt and Mr. A. M. Sheild presented a paper on this subject. They pointed out that the posture of a patient prior to, during, and after a surgical operation under an anæsthetic was a matter of considerable importance to the surgeon, to the anæsthetist, and in many cases to the patient. The subject was discussed under the following headings: 1. The posture of the head in its relation to that of the trunk. Extension, flexion, and rotation of the head were considered. Stress was laid upon keeping the head, whenever practicable, in the longitudinal axis of the body. The circumstances which favor the entrance of blood into the larynx and trachea were defined. 2. The influence of the force of gravity upon the circulation and respiration. The observations of Snow, of the Hyderabad Commission, and of Dr. Leonard Hill, were quoted; and the administration of anæsthetics to patients in the sitting and semi-recumbent postures was discussed. 3. The postures of surgery individually considered. (*a*) The dorsal, supine, or horizontal posture. The advantages of keeping the head turned to one side; and the disadvantages of allowing a patient to lie face upward, and with the head slightly extended. (*b*) The dorso-lateral posture. (*c*) The lateral posture. Its advantages in most major operations within or about the mouth and nose. Operations for empyema. (*d*) The lateroprone and prone postures. Necessity for caution when patients of certain types are placed in these positions. (*e*) The semi-recumbent posture. Its disadvantages except in a few special cases. (*f*) The sitting posture. (*g*) Special postures, including the lithotomy, the semi-inverted, Trendelenburg's, and the knee-elbow. 4. The posture of the patient after the operation. Remarks were made concerning the raising of patients for bandaging, etc., the application of bandages after empyema operations, and the appropriate positions for patients when the circulation is feeble. The authors strongly urged the advantages of at once turning patients upon the side after an operation, provided, of course, that there were no special contraindications.

The president, in congratulating the authors on their paper, said the subject was one of comparative novelty, and had not been previously so fully treated. The paper was full of careful criticism and valuable practical hints.

Mr. R. Gill congratulated the authors on having chosen a topic of wide interests and bearings, but would have preferred a less vague and generalized manner of treating the subject. He could not agree that position was so important, or that some postures were so dangerous as the authors said. He had given chloroform in almost every imaginable position without any bad results. In illustration he quoted cases where anæsthesia was induced in the lying-down position, which was then changed for the sitting-up position to allow of laryngoscopic examination. The authors had said that in overextension of the neck there was danger of blood and vomited matters entering the larynx; he considered the entry of blood very rare, and had never known vomited matters pass into the larynx.

The Index Medicus.—Mr. George S. Davis announces that the list of subscribers to the special fund up to November 5th, inclusive, is as follows:

New York State Library, per Melvil Dewey, Albany	$25
A. Vander Veer, M. D., Albany	25
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Milbank Johnson, M. D., Alhambra, Cal	25
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Massachusetts State Board of Health, Boston	25
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John Parmenter, M. D., Buffalo	25
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F. W. Henkel, M. D., Buffalo	25
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The Employment of Mallein in Military Practice.—In an article entitled *Chronique de l'hygiène*, published in the *Union médicale* for October 26th, M. Jules Rochard takes up the question of the diagnostic value of injections of mallein in glanders and in tuberculosis in animals. This question, he says, is one that concerns veterinary surgeons more especially, but others can not be indifferent to it, because, on the one hand, of the importance of everything that relates to new prophylactic methods, and, on the other hand, of the fact that tuberculosis and glanders are transmissible to man, and in combating these diseases in animals we diminish the chances of contracting them ourselves. For this reason M. Rochard thinks it will be of use to mention the following instructions issued by the French Minister of War in regard to the subject of the employment of mallein in the army: All the animals kept in one stable should be subjected to injections of mallein. After the test they should be divided into three groups: The first to be composed of those which, not having shown any organic or thermic reaction, may be considered as healthy. These animals may remain in the stable and take part in the work of the service. They should, however, be subjected to another test with the mallein. The second group is to be composed of animals the temperature of which is elevated more than one degree, organic reaction being more or less completely absent. They should be considered as suspicious subjects, isolated, and again subjected to the test; if any among them react completely, they should be passed immediately into the third group. When two injections have been administered successively without causing reaction, the animals may be restored to the service. The third group is to be formed of animals which have reacted completely, for example, by persistent and extensive œdema, dullness, prostration, trembling, loss of appetite, and hyperthermia, the minimum being 3·2° F. above the normal. Those of this class that continue to react in this manner after two injections of mallein administered at an interval of a month should be killed; those that show no thermic or organic reaction after the two injections may be kept in the service.

It is to be hoped, says M. Rochard, that the instructions issued by the Minister of War will be followed by all companies that employ large numbers of horses, in order that glanders and tuberculosis may be prevented as far as possible and to diminish in a large proportion the danger of transmission to the officers and men and, in fact, to all those whose work brings them in contact with horses.

The Reorganization of the Staffs of the City Hospitals.—In an article headed A "Shake-up" in the New York City Hospitals, the *Medical News* for November 2d says:

"But the chief objection made, and one which can hardly be gainsaid, is that under the new *régime* the appointments to the visiting staffs of these hospitals will be made solely from the three large medical colleges already mentioned. The commissioners, on the other hand, defend their action by stating that, as the system had worked well in Bellevue Hospital for a number of years past, they were anxious to improve the other hospitals by adopting the same system in them all. They also say that the measure is intended to remove the appointments entirely from political influence. Undoubtedly, to remove the appointments beyond the reach of politics would mean a great improvement in the service of the hospitals, but, if we mistake not, there is a good deal of politics in certain medical circles, and a "trust" composed of three powerful medical colleges, controlling a large and valuable patronage, is more than likely to be so tainted. It certainly does not seem right or just that these medical men, many of whom have conscientiously served these hospitals, and have given their best years to the work, should be thus peremptorily ordered to stand aside and make room for whomever it may please the colleges to put in their places. The commissioners say that it will be found, when the appointments are announced, that many of the former incumbents have been retained. So far, so good; but how about those who are dropped without a charge against them, without a hearing, and with no means of redress? If these hospital positions carry with them a great deal of prestige—and it can not be denied but that they do—can such arbitrary removal fail to work a gross injustice to those who have not sufficient influence with the colleges to secure their reinstatement?"

THE NEW YORK MEDICAL JOURNAL, November 23, 1895.

Lectures and Addresses.

THE PRESIDENT'S ADDRESS

DELIVERED BEFORE THE AMERICAN LARYNGOLOGICAL ASSOCIATION AT ITS SEVENTEENTH ANNUAL CONGRESS.

By JOHN O. ROE, M. D.,
ROCHESTER, N. Y.

In performing the pleasant duty of announcing the opening of the seventeenth annual congress of this society, I must first express to you my appreciation of the high honor which you have conferred upon me. To be elected president of this association is an honor which every member should justly prize, no matter whether tendered him because of his having been born great, or having achieved greatness, or, like Malvolio, having had greatness thrust upon him.

It becomes my pleasant privilege as your presiding officer to extend to you in my own behalf, in behalf of our medical profession, and in behalf of our city, a very cordial welcome to Rochester, with the hope that your stay with us will be both pleasant and profitable.

A glance at our ample and attractive programme assures us that the meeting can not fail to be intellectually profitable, and this outing and respite from our daily professional work can not be otherwise than physically beneficial.

But it is in another way that these annual gatherings are a lasting source of pleasure and profit, and it is on another account that we look forward to them with pardonable enthusiasm. It is the hearty good-fellowship in this way maintained between the members, whereby old ties become more firmly cemented and new frienships formed, that makes these meetings a lasting source of happiness. Also during our social interchange of the results of personal experience many valuable hints and much food for thought are often suggested that do not find place in the most carefully prepared papers and general discussions.

I will not detain you with any remarks relating to the general progress of the society, since its work was so ably and fully reviewed by the president last year. I can not, however, refrain from saying that the great advantage derived by the members from association in organized and specialized medical bodies can not be better illustrated than by the achievements of this society since its organization; and such achievements can result only from the permanent enthusiasm and punctual attendance of each and every member. Much can be said commendatory of the good work accomplished during the past year by many of its members, and also by those who are working in this department in other parts of the world; but it is familiar to you all and its recital is unnecessary. One of the most notable advances, however, made in experimental medicine relates to our department of science and is worthy of notice. It is the production of antitoxine, the most potent destroyer of the diphtheria germ yet discovered, as the excellent results obtained from its use clearly show.

Without further preliminary remarks I will call your attention for a few moments to some observations on the relation of damp air to diseases of the air-passages, with reference to the prevalence of these diseases in the lake region.

It may be said that no region of the earth with which we are acquainted has all the elements conducive to the perfect health of every organ. In those regions in which the climate is conducive to perfect health in one organ or set of organs, the same climate may be prejudicial to the maintenance of perfect health in other organs. For instance, in those regions in which the climatological conditions are conducive to a healthful condition of the respiratory organs the conditions may be directly or indirectly unfavorable to a heathful condition of the hepatic organs, or *vice versa.* This fact may be explained by the two disturbing influences which climate may exercise upon the health: first, the direct detrimental effect of the atmospheric conditions upon certain organs; and, secondly, the effect of the climatic conditions upon the habits and customs of the persons themselves, which habits in turn lead to derangements and finally to diseases of certain organs. For instance, persons living in a cold and stimulating climate are continually induced to subject themselves to imprudent exposures which are conducive to diseases of the respiratory organs, whereas persons living in a hot and sedative climate are inclined to lead a languid and indolent life, which is especially conducive to disorders and diseases of the biliary system.

The climate of the region of the Great Lakes, as is well known, is especially productive of diseases of the nose, throat, and lungs, and a comparative freedom from disease of the biliary and circulatory organs, as statistical reports clearly show. The principal climatic condition of this section that causes this proclivity to disease of the air-passages is the humidity and dampness of the atmosphere, associated with frequent, sudden, and often extreme variations in temperature, together with a lowered mean annual temperature.

The amount of humidity and dampness of the atmosphere of a region is influenced by a variety of conditions:

1. The nature and cultivation of the soil, the configuration of the surface, and the amount of forests.
2. Its elevation and temperature.
3. Its position with reference to the sea, large inland lakes, hot deserts, or cold regions, and the prevailing winds.

The nature of the soil has also much to do with the amount of moisture suspended in the atmosphere. If the soil is light and sandy, so that the surface water, after showers or rains, is readily drained away, leaving the ground dry, but little moisture remains in the atmosphere; whereas if the soil is heavy and underlaid with clay, so as to prevent rapid drainage, the air will become more or less damp. This is especially illustrated by the Adirondack region, which is filled with small lakes and ponds and has frequent showers and much rain, but at the same time the soil is so porous and sandy that the surface water is drained away at once, leaving the soil in a short time after a heavy shower quite dry. I have noticed this same condition in the Bermuda Islands, which are characterized by a very porous coral formation, and, although the air is a moist sea air, it is at the same time free from that condition termed dampness.

One of the most important problems in sanitary science is the adoption of perfect drainage of the soil, which has the effect to raise its temperature from a degree and a half to three degrees. Soil that is well drained and cultivated hence imparts less moisture to the air than uncultivated and forest land. In the lake region the soil is varied, and to a large extent highly cultivated. In some portions it is quite sandy, while in others it is heavy and underlaid with clay and rock, so that where artificial drainage is not thoroughly employed much dampness of the soil prevails.

The surface of this region is rolling and undulating, but quite free from hilly districts and devoid of mountainous regions with their attendant effects upon the climate. This section is, however, moderately elevated above the sea, having an altitude of about five hundred feet, which renders it more healthful than tide-water lands, but at the same time gives it a correspondingly lower mean annual temperature.

In an elevated region, other things being equal, the temperature falls at the rate of one degree for every three hundred feet of ascension, and as we recede from the equator the mean annual temperature is one degree lower for every geographical degree.

The salutary effect of altitude is due to the increased activity of the circulation of the respiratory organs, and the accompanying increased elimination of watery vapor from the bronchial mucous membrane, thereby preventing turgescence and the retention of detritus in these parts. This beneficial effect may, however, be largely interfered with if the air is charged with vapor and subject to frequent variations in temperature.

The condition which mainly affects the climate of this region is the chain of great lakes that derive much of their water from the colder regions of the north. This water, as it passes downward to the sea, has a chilling effect on the surrounding atmosphere, condensing its moisture into fogs, mist, and rain, and causing a lowering of the mean annual temperature. The mean annual temperature of Buffalo is the same as that of Rochester—40° F.—while that of Albany is three degrees higher, although in the same latitude, and is for the spring months nearly six degrees higher than our own locality. The chilling of the air by this large body of cold water passing through Lake Erie and Lake Ontario is also the cause of the frequent and rapid changes of temperature which in this region are experienced, especially during the spring months. The early warm days in the spring are invariably followed by chilling blasts from the north, which are the result of the heated air rising and causing rapid evaporation from the land, and a corresponding diminution in barometrical pressure. As the hot air rises, the process of aspiration draws the cold air from the north down to take its place. This process is repeated over and over again until summer temperature is established and the lake water is more or less uniform in temperature with the air.

In the fall, as the water parts with its heat more slowly than the land, the lake has a modifying effect on the temperature of the air for a considerable distance from the lakes, but farther inland the effect is not felt, as the heated air on the water rises, and by the process of aspiration draws the land air toward the lakes.

In winter the lakes have little or no effect upon the temperature or humidity, for when frozen or filled with ice their influence can scarcely be distinguished from that of the frozen land. Thus it will be readily seen that a lowering of the temperature of this region increases the relative humidity of the atmosphere, and a corresponding dampness results.

One of the characteristics of the climate of the lake region is the amount of cloudiness, which is greater during the cool portion of the year. The average cloudiness of this section for the past twenty-five years has been 6·1 days out of ten.

The amount of cloudiness and rainfall depends upon the temperature and humidity, although the absence of clouds and rain does not go hand in hand with a low degree of moisture in the air, for a region may have a very moist atmosphere and yet be rainless or comparatively cloudless, if it is free from cold currents of air which condense its moisture. The atmosphere of Lima on the coast of Peru is generally very moist, but it hardly ever rains there, whereas in the region of the Gulf of Genoa the air and soil are quite dry, although there is a great deal of rainfall.

The cloudiness, rainfall, and humidity of this region by no means correspond with each other. The cloudiness (6·1) and humidity (0·74) are excessive, whereas the rainfall is much below other localities where the cloudiness is very much less. The average rainfall of this region is 27·8 inches, whereas New Orleans has a rainfall of 85·1 inches with a humidity of 0·79 and a cloudiness of 4·4 days only out of ten. New York has a rainfall of fifty-three inches, a humidity of 0·73, and a cloudiness of 5·2 days only out of ten. Boston has a rainfall of 45·9 inches, a humidity of 0·70, and a cloudiness of 5·2 days out of ten. At each of these places the rainfall is much greater, while the mean relative humidity of the air is less than that of this region. Again, we see that Los Angeles, which has a relative humidity of 0·78 (exceeding this section in humidity, which is but 0·74), has a rainfall of 21·1 only, and a cloudiness of 2·8 days only out of ten. This is owing to the absence of cold air currents to condense its moisture.

The difference between the actual and relative humidity is often very great, and depends to a great degree on the temperature. The dew point, as we know, represents the degree of saturation, and air is termed "damp" only when it is at or near the dew point. Warm air will suspend very much more vapor than cold air, and therefore air containing the same amount of vapor in suspension will very much sooner reach the dew point in a cool than in a warm atmosphere.

The distinctions between humidity and dampness of the atmosphere should be more fully recognized. Many places, such as islands located at sea, and many portions of our coast, have a very humid atmosphere, but at the same time are salubrious because the soil is porous and well drained and the uniformly warm temperature prevents the air from becoming damp. Damp air has a most detrimental effect upon the body by checking the insensible perspiration of the skin and the elimination of watery vapor from the respiratory mucous membrane. When this is suddenly checked, we experience the sensation of a cold, and this is the common source of all the catarrhal conditions of the bronchial tract.

Mucous tissue subjected to a damp atmosphere becomes more or less turgescent, and this becomes more pronounced if the tissue is diseased. This is due to two causes—namely, (1) to the endosmosis of the watery vapor of the air that takes place because it is much less dense than the blood, and (2) to the checking of the elimination of watery vapor from the mucous membrane. This turgescence of the tissue causes an increased supply of blood to the part, and supernutrition and hypertrophy of the tissues take place. As the mucous membrane of the nasal passages is much more exposed to atmospheric conditions than the deeper structures of the respiratory tract and is provided with a greater blood supply, it is subject to frequent turgescence, and is accordingly much oftener the seat of diseased conditions resulting therefrom. It is for this reason that catarrhal affections of the nasal passages are so much more prevalent in the region of the Great Lakes, where the air is excessively damp, than elsewhere.

This effect of damp air is illustrated by the pernicious habit of sleeping with windows wide open, allowing the free entrance to the bedchambers of the cold, damp air of the night, surcharged with moisture, which becomes especially detrimental when the temperature of the air is below 65° F. This custom is more prevalent among the people of this country than those of any other, on account of their belief that a superabundance of fresh air is necessary to healthful sleep. In Europe, on the contrary, people are generally careful to prevent the damp night air from entering their sleeping apartments.

Many people sleep at night in an atmosphere that they could not tolerate or live in during the day, and more colds are contracted and more persons are subjected to injurious exposures during sleep, while their bodies are in a state of the least resistance, than from any other cause. How common it is in the morning to hear people on rising complain of being "choked up" and of having a cold which they think they must have taken the day before in some unaccountable manner, being at the same time entirely unconscious that the damp night air that they had been so freely inhaling while asleep was solely responsible for their condition!

The relation of damp air to consumption is well recognized. This relation was first pointed out by Professor Henry I. Bowditch, in an address on Soil Moisture a Cause of Consumption, delivered before the Massachusetts Medical Society in 1862. He ably and clearly showed that the prevalence of consumption in New England was not uniform, but was associated with districts, localities, and even with houses which were damp. His views on this question were so conclusive that students of sanitary science, both at home and abroad, and also boards of health, were much influenced by his investigation and deductions.

Since that time Dr. Bowditch's deductions have been corroborated by every writer on this subject and are also confirmed by our daily observations. Persons whose occupation necessitates their remaining for a great portion of the time in a cold, damp atmosphere, or those who are much exposed to the cold, damp air of the night, are more than others subject to phthisis. At the time Dr. Bowditch made his investigations the existence of the bacillus of tuberculosis was not known; but, notwithstanding the conspicuous part that the bacillus plays in the ætiology of phthisis, the fact remains that but few cases of phthisis can be traced to inoculation by the bacillus when the bronchial mucous membrane had not been rendered a fertile field for its growth by the disorders engendered by exposure to a *damp* atmosphere. This is clearly emphasized by the comparative rarity of phthisis in a *dry* atmosphere.

The relation of damp air to diseases of the nose, throat, and lungs is a subject of the utmost importance, as shown by the constant relation which they sustain to each other. In some instances, as in the case of this region, the influence of the cold-air currents from the lakes and the dampness caused thereby is, in a measure, uncontrollable. But in a great many instances, by thorough drainage of the soil and proper construction and ventilation of our houses, the prevalence of these diseases can be greatly lessened.

And now, gentlemen, before taking my seat I can not refrain from expressing to you again my heartfelt appreciation of the honor of being chosen to preside over this distinguished body. Trusting that in the discharge of my duties I may have your most cordial support, I now declare the seventeenth annual congress of this society open and ready for business in accordance with the programme before you.

Original Communications.

THE
GOLD COMBINATIONS AS ALTERATIVES.[*]

By THOMAS HUNT STUCKY, M. D., Ph. D.,
PROFESSOR OF THEORY AND PRACTICE AND CLINICAL MEDICINE,
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At a meeting of the Medico-chirurgical Society, April 15, 1895, I had the pleasure of exhibiting a series of cases which had been taking the preparations of gold and arsenic, known to the profession as arsenauro and mercauro. I was under the impression at the time that the good effect claimed was produced in three ways:

1. By stimulation of the secreting glands of the stomach.

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[*] Read before the Mississippi Valley Medical Association at its twenty-first annual meeting.

2. By the probable alterative effect upon those secretions.

3. That a local antiseptic influence was exerted.

Having continued my experiments in a vast variety of cases, both acute and chronic, and with varied effects and such unexpected results, I concluded at the first opportunity, if possible, to learn wherein and how these combinations exerted their peculiar and in many respects wonderful influence. This opportunity was afforded during my hospital service, which commenced April 15th last, or about four months ago.

At this time of the year the public wards as a rule are free from acute diseases, and the patients were mostly of phthisis, Bright's disease in its various stages, chronic hepatic troubles, and convalescents. I made it a rule with all these cases to withdraw all medicines except the combinations of gold and arsenic. I have selected from a series of cases some four or five, which, with your permission, will be read:

Case I.—J. H., white, aged sixty years; family history good; previous to April, 1894, in good health; normal weight, a hundred and forty-five pounds; present, a hundred and four. Although very feeble, has not taken to bed. On physical examination, the infraclavicular region of the right side was seen to be flattened, with diminished resonance and numerous moist râles, considerable cough, and muco-purulent expectoration, which contains the tubercle bacilli; has had loss in weight under continuous treatment during the previous six months; temperature ranging from 99·5° to 102° F.; pulse, 96 to 110 a minute. On April 22, 1895, eight drops of the mercuric bromide of gold and arsenic were given hypodermically every four hours, this treatment being continued for six weeks. No deleterious results were noticed; on the contrary, he is decidedly better; physical condition, color, bodily strength, and appetite improved, being now employed as a waiter. The blood counts made at the beginning and the end of the course illustrated well the improvement which had taken place; they are as follows:

April 22d.—Corpuscles, 3,800,000 to the cubic millimetre; hæmoglobin, fifty-five per cent.

June 19th.—The red corpuscles had increased to 5,378,000 and the hæmoglobin to eighty-two per cent. At this time cough and expectoration have disappeared and the moist râles no longer heard; temperature normal; pulse about 90 a minute; deficiency in resonance and expansion remain; tubercle bacilli not found.

The two points of interest in this case are: First, the increase in the number of red corpuscles; second, and more important, the increase in quality of the corpuscles as demonstrated in the increase of hæmoglobin. The next case is of considerable interest:

Case II.—F. P., aged sixty-five years, history of dissipation, admitted November, 1894; much jaundiced; pain in right hypochondriac region; pain and jaundice gradually disappeared, leaving him much emaciated; anorexia; bowels constipated; diagnosis, cirrhosis of liver. Urine shows no marked deviation from health. Blood contains many small and large red cells, the red corpuscles numbering 3,253,000; hæmoglobin, fifty-two per cent. Treatment, arsenauro, eight drops every four hours, hypodermically, commencing April 22d.

May 5th.—Patient appears to be stronger, remaining out of the bed and not requiring purgatives as formerly. Examination of the blood at this time shows 4,300,000 red corpuscles to the cubic millimetre; hæmoglobin, sixty-five per cent.

31st.—While still using the gold combinations there was a diminution in the number to 3,850,000 and in hæmoglobin to sixty per cent.

June 19th.—Patient seems to be in fairly good condition. During the past week he suffered from abdominal pain, diarrhœa following this attack. Treatment continued.

20th.—Examination shows 4,650,000 red corpuscles; hæmoglobin, seventy-five per cent.

While there have been fluctuations in the condition of the patient, he is after all much better as regards appetite and bodily vigor.

Case III.—John B., teamster. Notes of this case began in 1893. He then had flattening, especially of the right side, diminished resonance, pain on pressure in supraclavicular region, nocturnal cough, muco-purulent expectoration. The tubercle bacilli could not be found, and many slides examined during the following two years failed to reveal their presence.

Changes in the physical signs have been slow, the area of dullness has extended to the right side, the heart is drawn to the right. The left lung presents the same signs as the right, but not so pronounced; he has constant fever, the evening rise usually 101° and not uncommonly reaching 103°. The treatment in this case has been varied, including strychnine, cod-liver oil, hypophosphites, and the ferruginous combinations. There had been no improvement in his general condition for three months before the administration of mercauro. He remained in bed, appetite poor, anæmic, bowels constipated.

No examination of the blood had been made prior to April 20th, the day he was placed upon mercauro. At that time the blood corpuscles were 3,400,000, hæmoglobin sixty-five per cent. About ten days after this treatment was instituted there occurred a very remarkable increase in the appetite, with the complete disappearance of constipation. Four weeks later, after having been in the hospital for two years, he was sufficiently recovered to leave. The corpuscular count was normal, hæmoglobin eighty per cent., and he had gained ten pounds in weight.

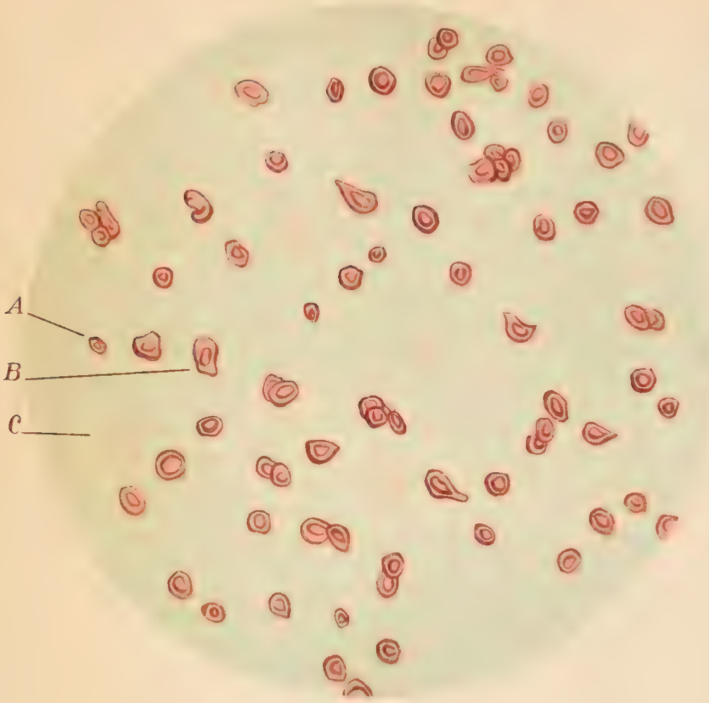
Case IV.—John H., aged sixty-five years, habits temperate; this patient was one of the few survivors of the pneumonia epidemic of last winter. He had a mild form of the disease, but it left him extremely feeble. Had been treated with Fowler's and Donovan's solution of arsenic, with the bitter tonics, malt, and stimulants, from March 14th to April 20th. At the end of this time he was scarcely able to sit in an easy chair; could not stand alone, very pale, pulse feeble and intermittent, bowels constipated, complete anorexia. On physical examination there were pronounced dullness, harsh breathing, and moist râles over lower lobe of the right lung, the upper lobe of the left being clear.

April 22d.—Placed upon arsenauro hypodermically every four hours.

May 3d.—The following is taken from bedside notes: "Patient eats a great deal, complexion good, walks about the ward, lung almost clear, no cough, no expectoration."

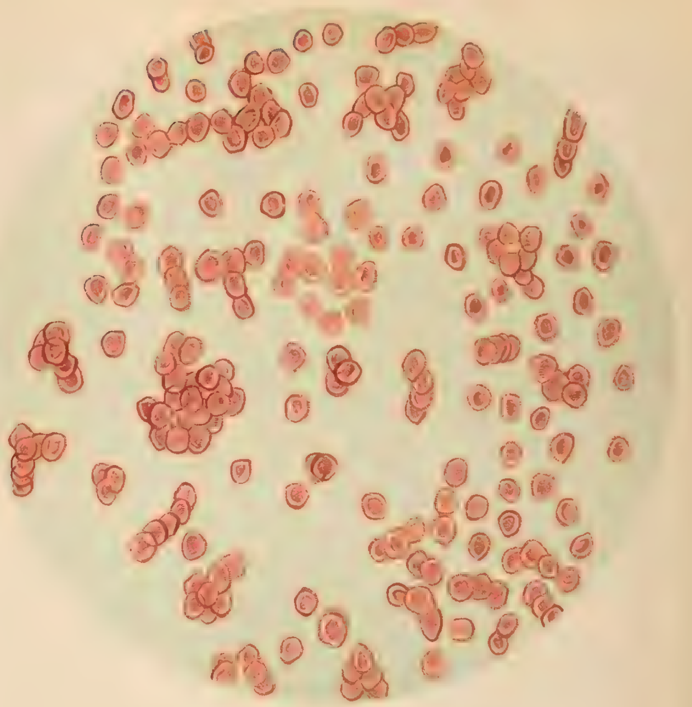
The rapid improvement continued, and the patient was dismissed May 20th, able to work at his trade. It should be noted that after five weeks' use of solutions of arsenic, bitter tonics, and alcoholic stimulants he had 4,000,000 red corpuscles to the cubic millimetre and hæmoglobin forty-seven per cent. Under the administration of bromide of gold and arsenic the

FIG. I CASE II.



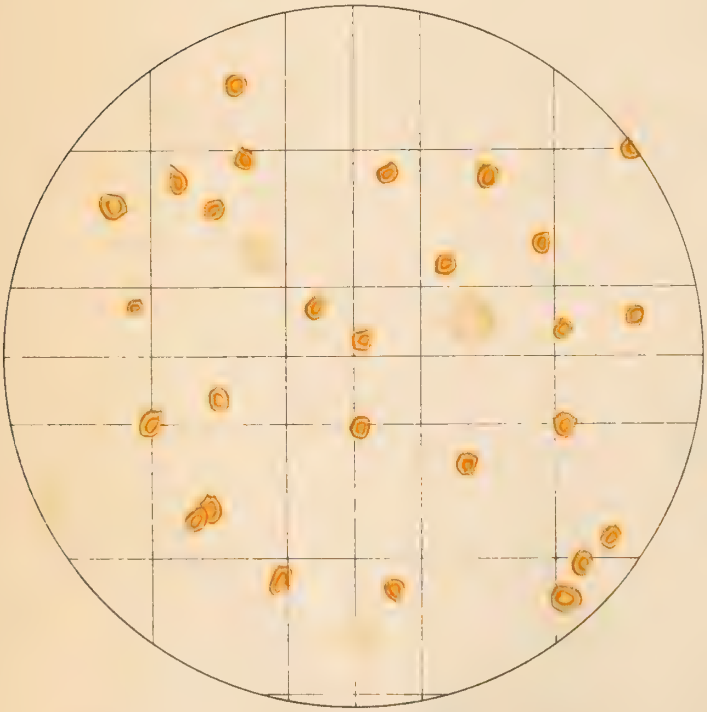
A. MICROCYTE. - B. MACROCYTE. - C. LEUCOCYTE.
Case of F. P. - CIRRHOSIS OF LIVER WITH JAUNDICE; BLOOD CHANGES OF SEVERE SECONDARY ANÆMIA.

FIG. II CASE II.



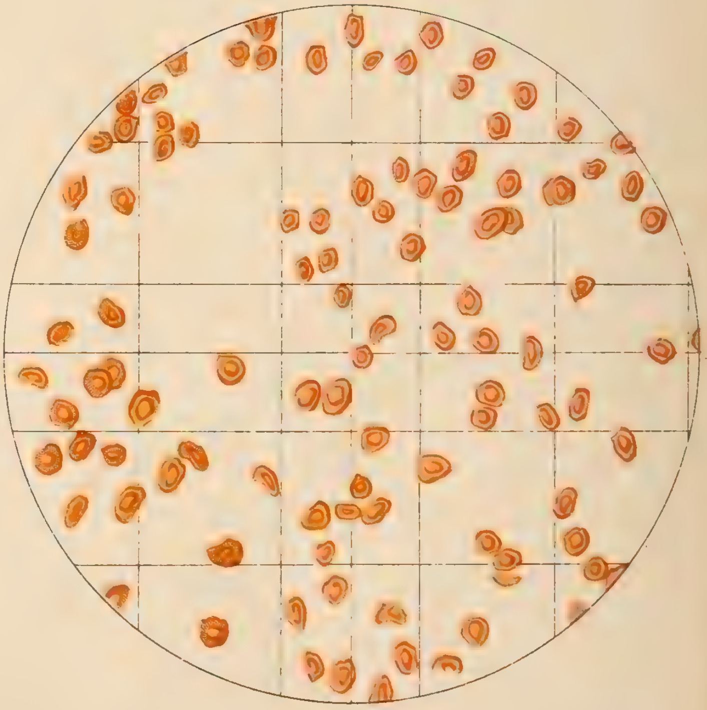
SHOWS INFLUENCE OF ARSENAURO UPON THIS CONDITION BY THE GREAT INCREASE IN NUMBER, SIZE AND QUALITY OF RED BLOOD CORPUSCLES

FIG. I CASE III.



Case of JOHN B. - CHRONIC PULMONARY TUBERCULOSIS, SHOWING MARKED DECREASE IN THE RED BLOOD CORPUSCLES.

FIG. II CASE III.



Case of JOHN B. - FOUR WEEKS LATER, THE RED BLOOD CORPUSCLES HAVING INCREASED 1 600.000 TO THE C.C

DR. STUCKY'S ARTICLE ON GOLD COMBINATIONS.

hæmoglobin increased to eighty-five per cent. and the red corpuscles to normal.

Case V.—Jacob H., aged sixty years. The patient, a Russian Jew, is deaf, and understands very little English. Examined April 21, 1895. Heart sounds normal; urine presents no striking abnormity. Chronic bronchitis; chalky deposits in different joints, particularly carpo-metacarpal, causing the usual grating sound when manipulated; knee and ankle joints painful—so much so that he is unable to walk; no fever; anæmic. The blood count showed 4,000,000 red corpuscles; sixty per cent. hæmoglobin; ten drops of mercauro ordered hypodermically every four hours.

May 10th.—Lungs clear, cough and expectorations ceased, walks everywhere. Discharged cured of cough and pain May 28th, corpuscular count showing 5,450,000 red corpuscles; hæmoglobin eighty-five per cent., or an increase in one month of twenty-five per cent.

Case VI.—Came under my treatment January 16, 1895. Mrs. W., aged thirty-seven years, preservation good, temperament nervous, being intelligent and cultured. She has been a morphine habitué for the past six years; this habit was induced by small quantities being given to alleviate pain, which she maintained originated from a lacerated cervix uteri; this laceration had been successfully repaired, but the desire for morphine still existed, and several futile attempts to rid her of the noxious habit had been made. When she applied for treatment her daily amount was about fifteen grains, which was taken by mouth. The method to be pursued in treatment, judging from the condition of the patient, was to decrease the amount taken by the fractional method of giving half the quantity received the preceding day. To combat the nervous disturbances anticipated by the withdrawal of the morphine, two drachms of the fluid extract of Jamaica dogwood and half an ounce of wine of coca were ordered every four hours. The result of this was not as expected, since on January 19th she was receiving three grains a day; the nervous disturbances were so great that it seemed unsafe to continue the treatment. Her temperature at this time was 97° F. Pulse rate, 110, and respiration, 26, respectively, per minute. Her appetite was much lessened, and was replaced instead by nausea; a serious diarrhœa also existed. The treatment, however, was carefully continued. On January 21st, when only one grain a day was being taken, her chart showed that the loss of appetite, nausea, and diarrhœa had become anorexia, vomiting, and purging, accompanied by continuous muscular vibrations. This resulted in an increase of the morphine to three grains a day, with the dogwood and coca discontinued. At this date liquor auri, arsenii, et hydrargyri bromidi (Barclay), ten drops every four hours hypodermically, was ordered, with no decrease in the amount of morphine taken.

January 23d.—The alarming symptoms still persist.

24th.—Oscillations throughout muscular system are much less marked, with some intermissions; diarrhœa not so severe.

25th.—Only six stools during the day; vomiting has ceased; some hot milk was retained in the stomach.

26th.—The patient slept well during the night; has had no stools; ate some solid food; trembling almost disappeared; no morphine had been given during the day and no desire for same.

The patient continued under treatment, and improved with careful watching. On February 8th the solution of bromide of gold, arsenic, and mercury was ordered to be decreased one drop a day. She was discharged, April 10th, cured permanently.

Case VII.—On February 4, 1895, Mr. H. came under my observation during the course of treatment of Case VI. Age, thirty-two years; preservation good; color exceedingly pale. This man presented the same malady as the patient in Case VI, having been a morphine eater during the past four years. Several futile attempts toward a withdrawal of the drug had been made, using various methods of treatment. The method of treatment in this case was materially different from that advocated in Case VI, since his daily amount of morphine, which was twenty grains hypodermically, was diminished less rapidly, and at the same time the diminution was supplemented by increasing doses of nitrate of strychnine, commencing with a thirtieth of a grain increased to a fifteenth, this being given hypodermically. The hypodermic syringe had always previously been used by him, resulting in a mutilated cutaneous surface by needle puncture. In order to preserve this surface as much as possible, the daily amount, twenty grains, was ordered by mouth.

This apparently had no effect in satiating the demand, which required the use of the syringe the following day; his anæmic appearance suggested the examination of his blood, which was made without further delay. The corpuscular enumeration amounted to 4,756,000, which was practically normal; the relative proportion of the white to the red was one to six hundred.

The corpuscular elements were, however, far below normal, since his hæmoglobin was only thirty-seven per cent. of normal. This, we concluded, gave origin to his extreme pallor. The treatment had been in progress only four days when the patient became very much discouraged, at the same time abandoning the attempt. This loss of moral courage was counterbalanced by a complete saturation of the system with morphine. This induced him again to apply for treatment. Instead of continuing the treatment on the same principle as before mentioned, the strychnine solution was abandoned; mercauro, eight drops every two hours, was given during the first two days, with the same quantity every six hours during the following seven days. The morphine was diminished a grain a day. At the end of ten days his condition was very good, having had no marked nervous disturbances, little loss of appetite, and no diarrhœa. The mercauro on February 18th was reduced to six drops every four hours, morphine being discontinued. On March 1st no morphine was being given, all desire for its effects having disappeared; the mercauro was ordered given by mouth. His color was much improved; his appetite for morphine no longer existed; his movements and speech had become composed. He was discharged April 1st, with a satisfactory result. The red corpuscles numbered 4,600,000 to the cubic millimetre.

These two cases are interesting to us from several points of view: 1. They show the comparative values of several methods of treatment used in these afflictions. 2. The impunity with which the economy adapts itself to the drug when given by mouth when it has once been used hypodermically. 3. That these varieties of diseases may be treated successfully with little inconvenience to the patient.

Case VIII.—Mrs. C. N., aged fifty-six years; occupation, housewife; preservation very good; history of syphilis not given. This case is one whose nature we find widely distributed and concerning whose outcome we are more or less anxious. This condition arises from the multiple lesions from which this condition may originate, and the many possible locations in which such lesions exist.

This old lady, on June 26, 1894, became suddenly unconscious, and the unconsciousness endured for six hours. When consciousness was regained she found there was a partial loss of motion on the right side. The attending physician, after a careful analysis and search of her history, diagnosticated the case as cerebral apoplexy. On July 13th, after acute symptoms had subsided, she was given increasing doses of sulphate of strychnine, with a thirtieth of a grain as a minimum dose; the doses were given three times a day in conjunction with electricity.

This was continued until January 2d, with apparent but not positive results, since only partial sensation, with no motion, had returned. At this time she applied to me for treatment. Her muscles on the affected side were remarkably atrophied, with a tendency to secondary contraction.

At this time she was receiving half a grain of strychnine three times a day; this, with electricity, was discontinued, liquor auri, arsenii et hydrargyri bromidi (Barclay), six drops every four hours hypodermically, being used. Passive muscular action daily was advised. A comparison of the right and left muscular systems, respectively, was also at this time ascertained. Around right deltoid region measured twelve inches; left, thirteen inches; right bicipital region, eleven inches; left, twelve inches and a quarter; right bicipital during flexion, eleven inches and a half; left, fourteen inches and a quarter; right middle third of thigh, twenty inches and a quarter; left, twenty-two inches and a quarter; right calf, twelve inches; left, thirteen inches and a quarter. The treatment suggested was faithfully executed. In a few weeks improvement was noticed, which continued.

On April 22d another examination of her condition was made. At this time she could feel distinctly whatever came in contact with the parts affected. By means of a dragging motion she was able to go from one place in the room to another. Extension of the forearm and the fingers could almost be complete, while the flexor muscles registered to the point twenty on the manometer.

Seeing the past improvement, the gold was still continued, with the expectation of a near approach to recovery.

On May 20th her entire arm could be extended to the plane of the shoulder; extension was very good; the flexor muscles of the hand had recuperated so that they registered thirty points more in strength on the manometer; walking was accomplished readily with the aid of a cane.

We see here a case, apparently hopeless, having reached a point in recovery providing the patient with power to do housewife duties. I selected these few cases out of a large number to demonstrate, in my judgment conclusively, that by the combination of gold and arsenic we have an agent acting as neither of the minerals do when administered separately, or, in other words, we have an entirely new agent in so far as therapeutical action is concerned.

It will be worth our while to look into the chemical differences between the chloride of gold and sodium (salted chloride of gold) and the bromide of gold and arsenic (arsenauro) with reference to its therapeutic action and subsequent elimination.

While not attempting to solve a question which has puzzled experienced men, a few remarks regarding the chemical differences of these agents may furnish a groundwork for an original theory.

1. The chloride of gold and sodium of commerce, so called, is not such in fact, but merely chloride of gold mixed with chloride of sodium; therefore for any chemical purpose chloride of gold only need be considered.

2. Chloride of gold is an extremely unstable compound, its identity being readily destroyed by light or air, while the addition of the least amount of organic matter will almost instantly convert it into albuminate, which upon contact with the mucous membrane or skin surface (the albumin thus formed) is extremely difficult of solution.

3. Gold bromide, even without the addition of the other material, is a more stable salt, is less sensitive to light, etc., and, when in combination with bromide of arsenic in aqueous solution as found in arsenauro and mercauro, this property of stability is increased to a seemingly very great extent.

4. This change in its attitude with reference to outside influences, from a chemical standpoint, may account for its altered therapeutic properties, and this may be said not only as regards the changes due to the combined therapeutic properties of the combination of gold and arsenic, but with reference solely to the probable modified or intensified quality, which appears to be a changed therapeutic equivalent in the gold itself.

5. As to what I conceive to be the reason of its changed or intensified therapeutic quality of gold in arsenauro, etc. The arsenic bromide added to this solution appears to have rendered the gold more tenacious of its dissolved condition, thus permitting it to be taken unaltered into the circulation.

The finding of gold in the urine after the administration of these solutions would appear to confirm this view.

Taking the formulæ of the two preparations, Fowler's solution would appear to be about thirteen times as strong in arsenic.

One would naturally expect to observe a corresponding therapeutic potency; such, however, is not the case.

Fowler's solution often causes stomach disturbances, and often exhibits suddenly what appear to be cumulative effects.

Such is not true of arsenauro, even though the full therapeutic effect of arsenauro is being obtained.

Fowler's solution is probably decomposed upon entering the stomach into chloride of potassium and arsenious acid; at any rate, after poisoning with Fowler's solution in quantities, arsenious acid has been found in the folds of the mucous membrane, enough having been redissolved or taken up before precipitation to kill. Arsenious acid is with difficulty soluble in the complex organic contents of the stomach.

These difficulties may be due to conditions in the metals themselves; due to the combination or to a possible new salt thus formed. Certainly the gold found in the combination is more stable and tenacious of its dissolved condition, and certainly the arsenic seems to be more readily absorbed, and to exert its therapeutic effect much more constantly and with a much smaller dose, and to be entirely free from that quality common to all other arsenical preparations, stomachic disturbance. As said before, this may be due to the combination of the two alterative tonics, or to a changed therapeutic equivalent in one or both metals, by their chemical action on each other. My experience up to April 1, 1894, had been in the administration of these products entirely by the mouth. Numerous writers within the past year reported some very unusual results obtained by their use in indiscriminate cases without any regard to any direct line of therapeutic application, or, in other words, that the therapy of the drug was not known. It seemed to be a sort of stopping-off drug, and when everything else failed a solution of the gold was tried.

It was with this idea in view, and the knowledge, or rather lack of knowledge, that led to these experiments. I believe that in the action of the combination of bromide of gold and arsenic we have an entirely different action from any therapeutical agent known; as compared with mercury, iodine, or the combinations of the iodides, the action of gold in the combinations named is greater and intensified; that these combinations enter direct into the circulation as gold and arsenic, and spend their force and exert their influence in an alterative way upon the glandular system; that a marked alterative effect is exerted upon all scleroses non-malignant; that it is not only a blood maker, but a blood builder, and a vaso-motor stimulant; that it not only increases the quantity of corpuscles, but the quality of corpuscles; that under its use hæmoglobin is markedly increased; that it is eliminated by the kidneys; that it produces no irritation either when given *per os* or hypodermically.

I desire to return thanks to Dr. J. E. Cashin and Dr. Purifoy at the Louisville City Hospital for very valuable assistance.

EXCISION OF A TUBERCULAR ELBOW IN A CHILD

WHICH HAD RESULTED IN ANKYLOSIS WITH SINUSES.

*DISEASE CURED AND MOTION RESTORED.**

By SAMUEL E. MILLIKEN, M. D.,

SURGEON IN CHIEF OF THE NEW YORK INFIRMARY FOR CRIPPLED CHILDREN; SURGEON TO THE INFANT'S AND CHILDREN'S HOSPITALS, RANDALL'S ISLAND.

Excision of any joint during childhood should be done only after less radical measures have failed to give relief; however, the elbow does not offer the same objections as the joints of the lower extremities.

An endeavor should be made to obtain a movable elbow, even if the growth of the limb is interfered with; a flail joint here after excision is rare as compared with the lower extremity.

Indications for Excising the Elbow in Children.—1. Tubercular disease which has not subsided under careful and continued mechanical treatment, arthrotomy having failed to give relief. 2. When the joint is ankylosed in a faulty position. 3. Persistent sinuses due to tubercular bone disease.

In the first instance we should consider the fact that any local tubercular lesion is apt to infect the whole system, as is evinced by the frequent deaths from tubercular meningitis in cases under treatment for a diseased joint. Owing to the structure of the elbow joint, it is readily understood why a partial excision does not offer a very favorable prognosis, as it is of great importance that we should remove every focus of disease. The following case illustrates some of the obstacles met with in excising the elbow joint:

On December 20, 1894, at the Children's Hospital, Randall's Island, I operated upon Samuel M., five years of age, who had had two or three partial arthrectomies performed, and not only did the sinuses continue, but the elbow was ankylosed as well. Under ether anæsthesia, through a single posterior incision the periarticular structures and periosteum were separated; but it was found necessary to chisel through the olecranon so as to bring the ends of the bones well into view and prevent the soft parts being injured by the saw. So far as possible, the operation was done subperiosteally, but the existing sinuses on the anterior and posterior surfaces made it tedious. After the ends of the bones were removed, it was found that a sinus on the anterior surface of the arm led down to a focus of disease in the coronal depression of the humerus.

It is necessary here, as with other joints, that every fragment of tuberculous tissue be removed, else the operation will avail little or nothing.

Dressing.—The wound was packed with iodoform gauze, extending through the joint, and the forearm put up at a right angle with the arm in a plaster-of-Paris splint. The wound in the anterior surface of the joint was allowed to close, while the packing through the posterior wound was continued for the purpose of drainage and to prevent the ends of the bones coming in contact, with the hope of obtaining motion. Although it was clear that motion in the joint was being restored, it was necessary to curette the sinus on the posterior surface some months after the operation before perfect union of the soft parts was effected. At regular intervals of forty-eight hours following the primary excision passive motion of the joint was practised, the plaster-of-Paris splint having been cut down so that it could be removed for that purpose.

Result.—It is now almost ten months since the excision was made, and, in addition to having relieved the joint of all tubercular disease, almost normal motion has been restored, as the boy can flex the elbow to seventy degrees (Fig. 1), and extend it to one hundred and seventy-five degrees (Fig. 2), giving a range of motion of one hundred and five degrees. Although the upper ends of the radius and ulnar were removed, the arm can be voluntarily pronated and supinated, though yet limited.

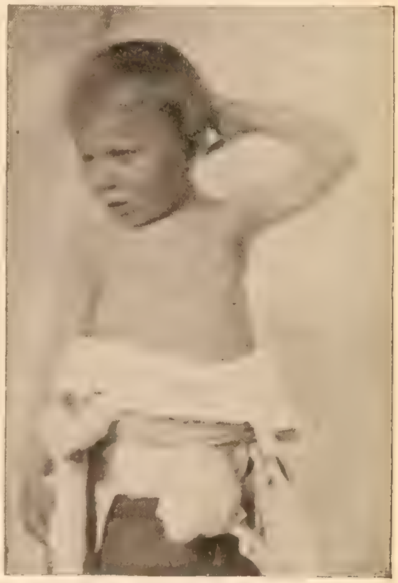


FIG. 1.—Showing voluntary flexion ten months after complete excision of the elbow for relief of ankylosis and sinuses due to tubercular disease.

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* Read before the New York State Medical Association, October 15, 1895.

Conclusions.—1. Excision of the elbow for tuberculous disease complicated by ankylosis and sinuses, to be effective, must be complete.

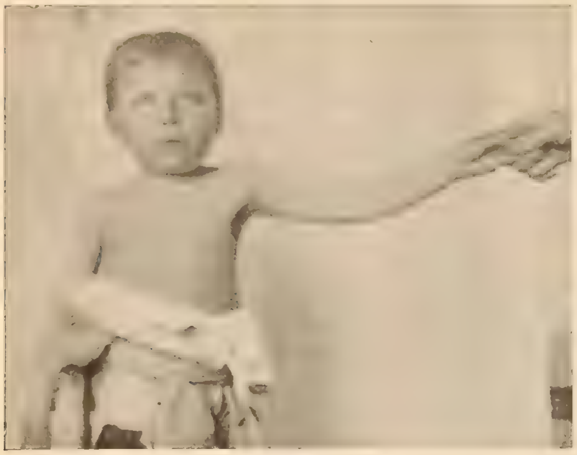

FIG. 2.—Voluntary extension after excision of left elbow.

2. The single posterior incision is preferable even in complicated cases.

3. When possible, the operation should be done subperiosteally, which gives a stronger joint, as all the ligaments are left intact and the subsequent hæmorrhage is lessened.

4. Gentle passive motion at regular intervals is essential to the restoration of motion.

5. Cases of excision of the elbow should be under the surgeon's care for six months at least after operation to insure the best results.

640 MADISON AVENUE.

DISEASES OF THE MOUTH, NOSE, AND THROAT

AS ÆTIOLOGICAL FACTORS IN CHRONIC GLANDULAR GASTRITIS, WITH BACTERIOLOGICAL STUDIES OF THE PHARYNGEAL VAULT.

BY FENTON B. TURCK, M. D.,
CHICAGO.

WHILE the diseases of the mucous membrane of the nose and throat may often be the ætiological factors in gastric disease, still we must not overlook the fact that the inflamed and hyperæmic condition of the nose and throat may often be the result of a lowered vitality, and may be the simple expression of a constitutional disease, the same as we find it in what is known as the "gouty throat." However, bacteriologic study has developed the fact that upon the mucous membrane of the mouth, nose, and pharynx groups of micro-organisms may form which may also be found growing on the mucous membrane of the stomach, and certain micro-organisms that are found in the inflamed mouth may also be found growing on the walls of the stomach in gastritis. It has been observed that pathogenic micro-organisms may be swallowed and still no infection of the stomach or intestine be apparent; but let some errors of diet, the abuse of alcohol, irregularities of living take place, then the mucous membrane forms a fertile soil for the development of micro-organisms. In cases of *la grippe* in patients having chronic gastritis it has been found that germs will cause an acute attack, severe enough at times to cause death. The percentage of HCl alone is not a factor in preventing the development of micro-organisms, as formerly supposed, since micro-organisms are found present in great numbers where there has been an excess of HCl running as high as 0·3 per cent. and 0·35 per cent.

In normal conditions the mucous membrane of the stomach does not favor colonization upon its walls. Let some ætiologic factor come into play and micro-organisms will develop, HCl being present or not. The mouth, nose, and throat, when in a diseased condition, become incubators ready to infect when the conditions of the stomach permit the development of growing micro-organisms upon its walls. The oral cavity is a perfect incubator, especially in infected mouths, which furnish a source of infection.

Miller has made a most exhaustive study of mouth bacteria and some very interesting experiments upon the invasion from the mouth, including the digestive tract. Even the staphylococcus and streptococcus have been found growing in the mouth, and Biondi found five pyogenic germs developing there. Experiments upon animals by Kreisbolm, Biondi, and others have demonstrated the infectious nature of micro-organisms in the mouth. Miller studied four pyogenic micro-organisms in detail and demonstrated their power of exciting inflammation. Kaczarowski, quoted by Miller, held that the infectious process in inflammation of the gums was caused by micro-organisms, and he was strengthened in this belief by the observation that frequent disinfection of inflamed gums or oral cavity in teething children would not only stop the inflammation, but also the concomitant catarrh of the mucous membrane of the respiratory and digestive tracts. In my experimental work in the clinic I have repeatedly made cultures from the mouth and stomach, and found many of the same variety of micro-organisms capable of producing inflammation.*

All micro-organisms that excite inflammation are not necessarily pyogenic, even lactic-acid micro-organisms form toxines that cause "catarrhal inflammation." (Wurtz and Lindet, *La Semaine méd.*, Paris, September 9, 1892.) Micro-organisms that are pus-forming in interstitial tissue do not become so when developing upon the mucous membrane, but may simply keep up chronic inflammation. The *Bacillus coli communis*, so long as it develops in the lumen, does not seem to produce any marked change, but when it develops on the walls, lowers the vitality of the cells beneath, paving the way, so to speak, for the more active pyogenic micro-organisms. Or let the *Bacillus coli communis* become imprisoned within the tissues, and it is at once transformed into a pyogenic micro-organism.

Many of the micro-organisms found in the mouth, while they do not produce pus, nevertheless induce inflammation, as in gingivitis marginalis. The same group of micro-organisms may be able to set up a chronic inflammatory process in the stomach.

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* Boardman Reed, of Atlantic City, N. J., has recently published important deductions from his long and extensive private practice and the observations he made in my laboratory and clinic. (See Reed, The Importance of Protecting the Stomach and Intestines from Pathogenic Germs. *Annals of Hygiene*, August, 1895.)

The teeth in the process of decay show a large variety of mixed infection. There is a bacillus decay and a micrococcus decay which differ in the chronicity of the destructive process. There is also a thread-form bacillus decay that causes a rapid destructive process in the teeth. We can not consider all the micro-organisms as being destructive or producing an inflammatory process when in contact with mucous membrane. These micro-organisms are carried by the food after mastication into the stomach. Many of them are recognized again in the stomach, and in cases of gastritis are found in colonies growing upon the mucous walls. In my work in the clinics I have found similar groups of micro-organisms taken from the gums and cavities in the teeth and from the material removed by the gyromele* from the walls of the stomach. Although many of these micro-organisms will not develop, especially the thread-form, upon ordinary nutrient-media, still, when colonizing in groups, they present such a similarity in appearance as to almost prove them identical. In cultures upon the prepared mucous membrane of the pig I have been able to cultivate some of the micro-organisms, and find the same developing in the stomach that are found in the mouth. It is quite a difficult matter to prove experimentally alone infection of the stomach from the mouth, for we do not know, when we use the material taken from the mouth of the patient and introduce it into the stomach of a dog or other animal experimented upon, what other factors enter in and what other micro-organisms are already in the stomach of the animal, which may also be the cause of an inflammatory process. In the control animal I have not yet found micro organisms growing in colonies in the stomach. I have only found stray micro-organisms, single or in pairs, not colonizing, which may be considered the normal condition.

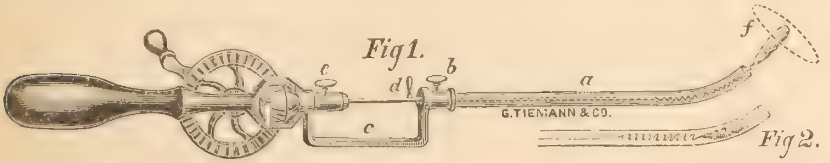

FIG. 1.—A gyromele for the post-nasal cavity. The catheter or tube, *a*, is attached to the gyromele and fastened by a screw, *b*. The spiral rod, to which the sponge, *f*, is fastened at the distal end, passes through the tube, *a*, and is secured by a screw, *e*. The dotted lines, *f*, show the rotation of the sponge. The sponge is drawn into the cannula for introduction or withdrawal of the instrument by means of a small button, *d*, attached to the spiral, which is held in place by a screw, *e*. FIG. 2 shows the sponge concealed within the cannula.

CASE I.—Mrs. J. L. Cultures were made from the mouth, in which were found large numbers of the *Bacillus lacticus*; germs of putrefaction as well as of fermentation and *Staphylococcus pyogenes aureus* were also found in an abscess in the gum; the thread-form were also found in the mouth. Cultures were made from the stomach also and the *Bacillus lacticus* was found. Groups of thread-form bacilli and staphylococci were found. It was a severe case of rapid gastric inflammatory process with beginning of atrophy. Disinfection of the mouth and placing the teeth in good order were the first indications in this case. A similar disinfection of the stomach with soap and water, followed by lysol, was instituted. An improvement in the case was manifested at once.

CASE II.—J. S. appeared at the Cook County Hospital clinic. His teeth were in a very bad condition, all the molars were decayed; in some parts of the mouth the gums had grown over the stumps and the mouth presented a very repulsive appearance. Cultures were made from the mouth and stomach in this case also, and many of the micro-organisms were found colonizing in the stomach as well as in the mouth—the small and long rods, some thread-form bacilli, and a great variety of micrococci, including streptococci, were found. In this case we ordered the patient to a dentist with instructions to put the whole mouth in perfect order. The case did not appear at my clinic for some time afterward. An examination of the mouth revealed the fact that all the teeth had been built up and the cavities thoroughly disinfected. The patient was ordered to thoroughly cleanse his mouth with antiseptic solutions, and this alone relieved many of the gastric symptoms, so that he did not consider them sufficient afterward to warrant a thorough treatment.

CASE III.—Nellie S., aged four years, appeared in the Post-graduate Clinic with a chronic diarrhœa, in which there was an acute exacerbation. The *Bacillus pyocyaneus* was found and was considered the cause of the acute diarrhœa. The mouth presented Hutchinson's teeth, completely corroded by chromogenic micro-organisms developing upon them. Some of the teeth were decayed and loosened. The gums were very much swollen, and the cover-glass preparations showed a great variety of colonies of small and long rods and micrococci. No stomach cultures were made, but the patient was referred at once to a dentist to have the whole mouth put in order. Antiseptic solutions were used daily, and with proper diet the patient completely recovered.

The bacteriology of the nose and throat has yet to be worked out. Kyle, of Philadelphia, has undertaken a very extensive study of micro-organisms in the various inflammatory processes of the nasal cavities. Part of the work he has undertaken in membranous rhinitis. Newcomb (*New York Medical Journal*, September 12, 1892) found rod-shaped micrococci. Magnier (*Revue de laryngologie, d'otologie et de rhinologie*, Paris) found in the caseous material ejected from the nose granular *débris* with multitudes of bacteria and a large number of long, rod-shaped bacteria. Deletti (*Archivio italiano di laryngologia*, Naples, November 4, 1891) found two different kinds of micro-organisms possessing pathogenic power in rabbits. The first, small round micrococci occurring in pairs, injected under the skin in rabbits produced œdema in thirty-six hours; the second was a short, thin bacillus with round extremities, also occurring in pairs. The injection of this produced a more diffuse œdema which disappeared afterward. In cases of angina follicularis the various micro-organisms have been carefully studied. Sendtner (*Münchener medizinische Wochenschrift*, November 26, 1891) made a careful study of the micro-organisms, and found the *Streptococcus pyogenes* in some cases and the *Streptococcus erysipelatosus*. Others have found the pseudo-diphtheritic organism.

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* The use of the gyromele (revolving sound) was first presented before the International Congress at Rome in 1894, with report of cases. It was also described, with additional cases, in the *Wiener med. Woch.*, Nos. 1 and 2, 1895. It consists of a flexible cable to the end of which is attached a sponge covering a spiral spring which can be removed and changed. The cable passes through a rubber tube, and this again is attached to a revolving apparatus for the purpose of producing revolutions of the sponge within the stomach. The cuts here shown are from instruments made by Messrs. George Tiemann & Co., New York.

The investigations that I have made of the following cases covered a period of three years. Cultures were made from the nasal and post-nasal cavities, as well as cultures derived from the stomach walls. An attempt was made to find a relation between chronic naso-pharyngitis and chronic glandular gastritis, as clinical evidence in many cases pointed to the infection of the stomach from the post-nasal cavity. It was not until two years ago that I was able to secure cultures from the different areas of the nasal cavities, as well as from the stomach, without contamination of adjacent parts. This is accomplished by the gyromele, which was first used in the stomach. I have modified the instrument for use in the anterior and posterior nares. The instrument when used for bacteriological work is a small cable, to which is attached a sponge incased in a sheath and exposed when reaching the part from which cultures are to be taken. It can be introduced as far as the posterior pharyngeal wall and passed up as high as the adenoid tissue in the vault of the pharynx. The sponge is exposed at this part, and revolutions produced which will remove material from the walls, the sponge retracted within the sheath, preventing contamination of adjacent parts. Before use the instrument is, of course, sterilized. Simple cover-glass preparations stained from cases of chronic naso-pharyngitis showed long and short rods, capsulated short rods, micrococci, and in many cases colonies were found. In hanging-drop preparations, especially when left in the old thick mucous discharges containing necrosed epithelial cells and round cells they seemed to develop rapidly. A short capsulated rod like the so-called pneumococcus (Friedlaender) developed in this medium. Many of the micro-organisms found presented many identical morphological and physiological appearances of those found in the same cases of chronic gastritis. Most of the post-nasal bacteria, as well as stomach bacteria, grow well upon the sterilized mucous membrane of the stomach of pigs,* specially prepared for bacteriologic purposes.

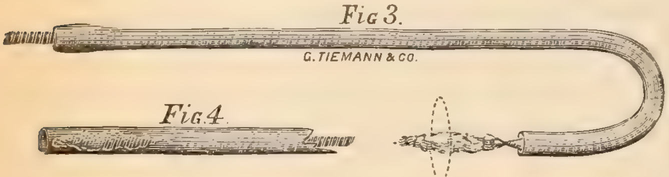

FIG. 3.—A gyromele for taking cultures from the stomach. The stomach tube is attached to the gyromele in the same manner as the nasal tube in Fig. 1. FIG. 4 shows the sponge drawn into the tube.

There was a marked difference in the number and appearance of micro-organisms found in the anterior nares, the nasal and post-nasal cavity. In the anterior nares all forms are found, but were not colonizing, and therefore seemed to be simply arrested at that point (the opening). In the nasal chamber, as along the turbinated bodies, but few germs were found, while in the post-nasal cavity when a chronic inflammation existed almost pure cultures were found. The lymph cells derived from the vault of the pharynx seem to act as "phagocytes" that may carry infection to the stomach and other parts. Hanging-drop cultures containing the lymph cells develop rapidly in twenty-four to forty-eight hours, while drop cultures taken from the same area, in which but few lymph cells are present containing mostly epithelial cells with the mucus, did not develop colonies. Cultivation demonstrated that the mucus and epithelial cells with bacteria present produced negative results—the bacteria being inactive; while material derived from the wall, especially from the adenoid tissue made up of lymph cells filled with bacteria and micrococci (phagocytes), proved positive—*i. e.*, capable of producing inflammation in animals.

In four cases pure cultures of the following micro-organisms—*Pneumobacillus Friedlaenderi* (the so-called pneumococcus of Friedlaender), streptococcus, and *Staphylococcus pyogenes*—were found growing in the post-nasal pharynx, as well as upon the walls of the stomach. They were observed in colonies imbedded in the mucus, with glandular cells of the stomach and round cells showing an active process. Subcutaneous injections of some of the cultures proved them to be active pathogenic micro-organisms.

I have made frequent bacteriological examinations of my own stomach, and in other cases which I considered were in a normal condition, and, although finding a number of micro-organisms, no such colonization was found as in these cases of gastritis. There is a marked difference between active and inert germs of the same variety. The pneumobacillus may be inert in one case and in another active. This can only be determined by subcutaneous or peritoneal injections in animals.

CASE I.—T. D. H., aged thirty-two years. Principal symptoms: distress in the stomach, bloating, gas, eructations after eating. Complains of frequently "catching cold." Physical examination revealed a chronic glandular gastritis. With that was subacute naso-pharyngitis, with hypertrophy, follicular pharyngitis, enlarged and swollen pharyngeal vault.

Treatment.—Marked improvement after being referred to laryngologist. Treatment of the nose and pharynx allayed many of the gastric symptoms.

CASE II.—F. A. H., aged forty-one years. Principal symptoms: belching after meals, alternating diarrhœa and constipation, pain in the epigastrium, large amount of muco-purulent discharge in the morning from the nasal cavity. Had frequent attacks of bronchitis, "catarrh in the head" for four years, and gastro-intestinal symptoms for three years. Treatment of the nose and throat referred to a laryngologist, with result in a general restoration of the patient with disappearance of the gastro-intestinal disturbance.

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* For methods, see *Wiener med. Woch.*, No. 1, 1895; Turck, *Methods of Bacteriologic Studies of the Stomach*; also *Journal of the American Medical Association*, running through March issues of 1895. Turck, *Bacteriologic Studies of the Stomach in Carcinoma*, March 23, 1895.

Cultures from the Post-nasal Cavity.

Case number.	Strepto-cocci.	Staphy-lococci	Pneumo-bacilli.	Other forms.	Remarks.
1	Present.	Present.	Present.	Saprophytic bacteria, lactic acid, spirillum.	Two cultures made.
2	Not found.	Present.	Present.	Long, thread-form forming a knot.	The thread-forms appeared like a tangled mass of shreds.
3	Present.	Present.	Present.	Short, capsulated rod, also *Bacillus coli* (?).	....
4	....	....	....	Stained preparations; large variety, long and short rods, spiral, and micrococci.	No cultures made.
5	Present.	Present.	Present.	Short rods, capsulated.	Short rods, acid reactions; no reaction to Uffelmann's reagent; coagulated milk in 48 hours.
6	Present.	Present.	Present.	Short rod resembled *Bacillus coli*, but no indol reaction.	Short rods produced acid reaction; no reaction to Uffelmann's reagent.
7	Present.	Present.	Not found.	Stained preparations, groups of rods and micrococci.	....
8	....	....	....	Round cells filled with micrococci.	Drop cultures only examined in the mucus as media.

Cultures from the Stomach.

Case number.	Strepto-cocci.	Staphy-lococci.	Pneumo-bacilli.	Other forms.	Remarks.
1	Present.	Present.	Present.	Spiral forms; yeast cells.	Spirals died out in gelatin cultures.
2	Not found.	Present.	Not found.	Long threads, two or three in groups.	The long threads did not develop on gelatin or agar-agar.
3	Present.	Present.	Present.	*Bacillus coli.*	
4	....	....	....	....	No cultures made.
5	Present.	Present.	Present.	*Bacillus coli;* indol reaction positive.	
6	Present.	Present.	Present.	*Bacillus coli;* indol reaction; gas forming.	
7	Not found.	Present.	Not found.	*Bacillus coli;* lactic-acid-forming micro-organism in one tube; thread-form.	The thread-form developed a few colonies on prepared mucous membrane of stomach of pig.
8	....	....	....	....	No cultures made.

Case III.—E. A. S., aged thirty-seven years. Complained of a feeling of fullness after eating; lost in weight in one year eighteen pounds; closure of the left nasal cavity; follicular pharyngitis; has been troubled with phlegm for three years; gastric symptoms marked two years and a half. Examination: The turbinate was found enlarged and hypertrophied. The hypertrophied turbinate was cauterized, as well as the posterior wall of the pharynx, and treated with antiseptic solutions, after which appropriate gastric treatment was instituted. The patient made a rapid recovery.

Case IV.—H. D., aged eight years. Adenoid vegetations, with vomiting and diarrhœa; otitis media. The gastric disturbance in this case clearly followed the naso-pharyngeal disease. The adenoid vegetations were removed, the nose and throat disinfected, and treatment of the middle ear instituted. Appropriate diet was ordered, and the patient recovered without further treatment.

Case V.—L. L. C., aged forty years. Complained of a constant discharge from the nose and throat. Throat seemed to fill up with hard, tenacious "phlegm like glue." Considerable hoarseness, pain over the right eye, and tears running down the cheeks. Alternating diarrhœa and constipation, belching of wind, dull pain in the region of the stomach after meals. Complained of catarrh in the head for five or six years; gastric symptoms for two years and a half. Examination: Anterior nares swollen and red; scoliosis of sæptum and exostosis running back to the posterior nares. Pharynx swollen and red; bleeds very readily. Hypertrophic rhino-pharyngitis. Referred patient to laryngologist. Operation declined. Instituted gastric treatment with only slight amelioration of symptoms. After six months the patient submitted to operation. The exostosis was removed from the sæptum, the nose and pharynx cauterized, appropriate antiseptics applied, and the patient reported in two months a complete disappearance of all the symptoms.

Case VI.—F. C. A., aged forty years. Complains of dizzy spells, vertigo, insomnia, pain in the epigastrium after eating. Says he can not breathe well through the left nostril. Nasal symptoms began six years before seeing the patient; gastric symptoms, four years. Examination: Gastric secretion; hydrochloric acid diminished; large amount of mucus, swarming with bacteria, removed from the stomach. Rhino-pharyngitis atrophica; scoliosis left side of sæptum, with bony crista of the sæptum. Throat markedly congested; thickening of the left vocal band. Patient referred to laryngologist. Refused operation. Treated nose and throat with antiseptic solutions. Patient put upon appropriate diet, with treatment of the gastro-intestinal tract. Treatment continued for two months. The symptoms, although ameliorated, did not disappear. As the patient would not carry out instructions, he was discharged. From previous experience I would conclude that if the nose and throat had been properly attended to many of the gastric symptoms would have disappeared.

Case VII.—Mrs. F. G. C., aged thirty-nine years. Complains of cramps in the epigastrium, periodic, often at night; constipation; deafness in left ear; has frequent attacks of coryza; period of distress, three years. Examination revealed a gastro-enteritis, with dilatation and retention of food. Hypertrophic rhino-pharyngitis; sclerosis of the middle ear; teeth decayed; of most of the molars nothing but the roots were left. The patient was referred to a laryngologist and dentist for appropriate treatment, and at the same time gastric treatment was instituted. The patient, after three months, gained in weight, and most of the symptoms disappeared, with the exception of the disturbance of the ear.

Case VIII.—A. N. V., aged thirty-five years. Gas an hour after meals; ructus and great gastric distress, especially after night. Difficult breathing; posterior rhino-pharyngitis chronic, with beginning atrophy. Scoliosis dextra; exostosis. Treatment of the nose and throat, disinfection, with surgical treatment, and also disinfection of the stomach, with appropriate diet. Symptoms rapidly disappeared.

These cases are selected because of their similarity in infection of the nose and throat. Many of the patients gave histories of a previous naso-pharyngeal inflammation, and the gastric disturbance followed the infection of the upper respiratory tract, so that the infection of the stomach can be attributed to the swallowing of the mucus, round cells, and epithelial cells, laden with micro-organisms, which developed later upon the walls of the stomach. It is impracticable to give the details of the complete examination of each of these cases, but the bacteriological examinations made, with the clinical study of the cases, showed clearly that the infection of the nose was followed by infection of the stomach.

Conclusions.—1. Clinical observation in many cases indicates a marked relation between diseases of the mouth and post-nasal cavity and chronic inflammation of the stomach and intestines.

2. The invasion of the stomach from the infected mouth and pharynx is supported by the fact that many of the known pathogenic micro-organisms present identical biological and morphological forms in cases of gastritis as the micro-organisms found in diseases of the mouths and post-nasal cavities of the same patients.

LUDWIG'S ANGINA.*

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It is always unfortunate to attach to a pathological process the name of an individual. It may serve at first the more readily to identify the diseased condition referred to, but current views are modified in the light of subsequent study, and the significance of the chosen term gradually becomes less and less definite.

Illustrative of this fact is the experience of the term "angina Ludovici," or Ludwig's angina, which was introduced into medical literature in 1837 as the result of the publication a year previously by Ludwig, a surgeon of Stuttgart, of a series of cases of a form of inflammation of the neck not, according to him, previously described. It figured on the medical page for some time and then apparently fell into disuse. During the last ten years or so it is met with in a gradually increasing frequency.

Names are often in medicine but the fashion of one decade after another. Pathological processes remain, of course, the same. The names applied thereto may show a great variation, and the latter is in turn due to changes in view as to the ætiological factor, which often, as in the case now considered, remains an open question.

The modern conception of Ludwig's angina is well set forth in the definition given in Foster's *Encyclopædic Medical Dictionary*—viz.: "A diffuse phlegmonous inflammation of the floor of the mouth and of the intermuscular and subcutaneous tissue of the submaxillary region which may end in gangrene, abscess, or resolution, and which sometimes prevails as an epidemic." This definition, with the insertion of the word "infectious" at its commencement, will perhaps answer fairly well as a point of departure.

In regard to its epidemic character no contention has ever been made, so far as known, that it is so in its primary form. The opinion that it occurs more frequently during outbreaks of diphtheria does not seem proved. As a sequel to, or complication of, infectious diseases it has perhaps been observed more frequently with typhus fever than with any other malady, but positive testimony to this effect is very meagre.

It is not at all certain that Ludwig was the first either to recognize or to describe this special phlegmon. Thirteen years before, Heim had observed a disease of apparently the same nature, but did not draw serious attention to the subject, though Ludwig was probably ignorant of this previous experience. Some writers, following the latter's lead, have seen in this phlegmon a special form of suppuration, a specific affection accompanied by a profound erysipelas; others, notably Bamburger, have included under this head all phlegmons of the neck. The point is, rather, whether there is or is not a special form of phlegmon of the neck which deserves a corresponding special consideration.

Naturally, our first reference is to the statements of Ludwig himself. He enumerated as the diagnostic features of the malady the following:

1. The slight inflammation of the throat itself, which, even when it is present, disappears after a day or two, and which when it persists may be looked upon as of secondary symptomatic importance.
2. The peculiar woodlike condition of the connective tissue, which does not pit on pressure.
3. A hard swelling under the tongue, with a bolsterlike swelling around the interior of the lower jaw, of a deep-red or bluish-red color.
4. A uniform spread of this induration in such a way that it is always sharply bordered by a zone of entirely unaffected cellular tissue.
5. Escape of the glands, although the disease attacks their cellular-tissue surroundings, and may even commence therein. All subsequent writers coincide as to the first four features enumerated, but many differ as to the fifth.

As case after case was reported, various names were given explanatory of the view of different writers as to the exact nature of the affection. Ludwig's own designation was "gangrenous induration of the neck." A year later (1838) Camerer was the first to use the master's name and call it "angina Ludovici." Von Thaden, in 1872, used the term "submaxillary bubo"; in 1875, Dumonteil, "sublingual abscess"; Schwartz, "sublingual phlegmon"; and Aussilloux, "subhyoid phlegmon." In 1883 Roser regarded it as an acute inflammation of the submaxillary gland and of the surrounding cellular tissue. He asserted that it occurred in an epidemic form, and regarded it as due probably to a special infection. He upheld the morbid entity of this phlegmon, but did not assign to it a more precise anatomical site than is suggested in his definition. Boehler, in 1884, refused to regard the disease as possessing characteristics sufficiently distinctive to entitle it to a special name. Tissier and Chabrol, in 1886, styled it "infectious submaxillary angina." Chantemesse found in one case the streptococcus of erysipelas, and used the term "erysipelas of the pharynx." Other names proposed have been "diffuse cervical abscess," "diffuse cervical phlegmon," "cynanche cellularis maligna," and "cynanche sublingualis rheumatico-typhodes." In a discussion before the Surgical Society of Paris, some two or three years ago, opinions were about equally divided upon the question of specific identity, Delorme posing as the champion, and Nélaton as the opponent, of this view.

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* Read before the American Laryngological Association at its seventeenth annual congress.

A modern definition from the clinical side, and one given by an American writer, is that of Gerster: "A phlegmonous destruction of the submaxillary gland, characterized by alarming and extensive dense œdema caused by the unyielding character of the fascial envelope of the gland, which œdema is most manifest about the latter's vicinity—*i. e.*, occupies the floor of the mouth." It will be noticed that most of the modern definitions limit the inflammatory focus to the submaxillary gland, while the older ones include a much wider area.

It is extremely difficult to decide how many cases have been reported. The references extend over a period of sixty years. All the writers have not apparently had the same thing in mind in the use of the title. A careful search has not been able to find the records of more than a hundred cases, though probably many more may be on record. Some profess to have seen many cases, but give scant particulars thereof. They seem to have regarded them as of no grave moment. Others have reported a single case in great detail. Roser professes to have seen twenty, with but one fatal result. Of these, eight resulted in external abscess and three in internal, the latter opening near Wharton's duct. Another observer found, of sixty-five thousand cases of all sorts tabulated, but ten cases of Ludwig's disease, and of these ten, seven were easily cured.

Out of the various confusing statements given, it would seem that the true way to look upon the disease is to regard it, first, as an intensely infectious phlegmon, and, second, as occurring under peculiar anatomical conditions. It is, in fact, one form of septic sore throat, distinguishable, not ætiologically, but anatomically. Bacteriological research has thus far discovered no pathognomonic germ in Ludwig's angina. Messer, in his recent work on medical diagnosis, states that the cause is now believed to be of the nature of an actinomycosis. He is not supported in this view, so far as known, by any other writer. Still less is there any record of the presence in the discharge of actinomycetes—those peculiar bodies of a sulphur-yellow color, with a striking appearance, and not likely to be mistaken for anything else. Moreover, actinomycosis is a chronic affection, involving primarily the jaws rather than the cervical tissues. In the light of our present knowledge there is no evidence that any special infectious germ can be looked upon as the sole cause of the disease.

There is a unanimity of statement as to the post-mortem findings in the fatal cases. A general disorganization has been found of the cervical cellular tissue and muscular substance. Large sloughs have occurred, mixed with an ichorous fluid or offensive pus. In several instances the latter has burrowed down along the planes of cellular tissue to the sternum, mediastinum, and even pericardium.

Infection, as the exciting factor, may come from an infinite variety of sources. The predisposing factors are all lesions of the glands of the mouth, herpetic ulcerations of the lips, dental caries, eruption of the wisdom teeth, and amygdalitis. All these conditions favor the entrance of the virulent germs into the lymphatics, and conveyance thereby into the circumglandular cellular tissues. Cold as an exciting cause signifies very little, for we now believe that in many instances what is termed "cold" is but infection of unknown origin, nature, and mode of entrance into the body.

It is important to bear in mind just where the pus originates. The region has been named by Tillaux, in his *Topographical Anatomy*, the sublingual portion of the floor of the mouth. It is the "sublingual hollow" of Sebileau —*i. e.*, a triangular pyramidal space, the apex of which (situated below) corresponds to the point where the mylohyoid muscle borders the genioglossus, and the base of which (situated above) stretches along under the tongue. Its external wall, which is oblique, is formed by the internal face of the inferior maxilla and the mylo-hyoid muscle; its internal wall, which is vertical, by the genioglossus and myoglossus. The mucous membrane of the floor of the mouth and the sublingual glands close its cavity on top. The latter, some eighteen or twenty in number, with their cellular-tissue matrix, are the most important contents of this space.

Matignon finds a confirmation of these anatomical considerations in the following clinical facts:

1. The upward thrusting of the tongue on the affected side by the purulent collection shut in by the resisting muscular bands.

2. The foci of pus in the buccal cavity on the spontaneous opening of the abscess.

3. The certain issue of pus and the disappearance of the anginoid phenomena after the discission of the fibres of the mylo-hyoid muscle.

From a literal interpretation of the foregoing, the sublingual gland must be the starting point of the morbid process, but writers of recent years have chosen to assign an important rôle to the submaxillary also; yet the inflammation of this gland alone does not determine the clinical phenomena of sublingual phlegmon. Two explanations are given for this secondary infection. It may be that the germs which have determined the sublingual phlegmasia have also penetrated the sheath of the submaxillary gland, or it may be that the sublingual pus, having dissociated the fibres of the mylo-hyoid muscle, has invaded the submaxillary region.

Aussilloux's designation of subhyoid phlegmon illustrates the fact of different writers having had differing views as to the pus origin, for the subhyoid region is quite distinct from that described above.

The subhyoid region forms a part of the floor of the mouth, anterior wall, and part of the lateral wall of the pharynx. It is situated symmetrically in the median line, limited externally by the inferior maxillary parabola, laterally by the carotid triangles and the internal border of the mastoid muscle, inferiorly by the hyoid bone.

Phlegmons here are subhyoid, but not necessarily sublingual. In fact, the mylo-hyoid muscle divides this general region into a deep or sublingual and a superficial or subaponeurotic portion.

The symptoms of the condition are constitutional and local. The former may be of either a sthenic or an asthenic type, following the general course of those of an asthenic fever. The local symptoms present the following diagnostic points:

1. A woodenlike induration of the affected region, sharply defined from the surrounding normal tissue.

2. The thrusting forward and upward by the accumulating inflammatory products of the tongue toward the palatal vault.

3. Severe dyspnœa with the attendant danger of laryngeal œdema.

4. The presence of a hard pad or buttonlike swelling at the internal aspect of the dental arcade. All of these occur with the general pain, redness, heat, and swelling in the cervical region—*i. e.*, the classical features of a phlegmon. Swallowing is painful if not impossible. In fact, it is next to impossible to open the mouth at all, for the muscles by which this is normally done are partly imbedded in the infiltrated cellular tissue and partly participate in the inflammation. Notably is this true of the mylo-hyoid, which, being the muscular floor of the mouth, is raised in deglutition.

The prognosis is grave. Of those cases on record, somewhat over forty-three per cent. have resulted fatally. The usual causes of death are œdema of the glottis and suffocation or general sepsis from local absorption.

A diagnosis must be made from—

A. Osteomyelitis of the jaw; but here there is no limited focus of inflammation, the bone is affected in its entirety, the inflammatory process is more generalized, and the subhyoid region is rarely involved.

B. Simple adeno-phlegmon of the submaxillary gland; but here the inflammation is more superficial, the submaxillary gland and its envelope are easily accessible, there is no wooden hardness; incision of the superficial fascia will give exit to pus, and the inflammation is localized at the outset behind the internal face of the maxilla.

C. A rare condition called Fleischman's "hygroma," which is sudden in onset, without local evidences of inflammation in the median line, and devoid of constitutional symptoms.

The statistics of only fifty-eight cases are given in sufficient detail to serve us for purposes of study. In thirty of these the cause is stated to be: Cold, 9; carious teeth, 12; dental neuralgia, 2; dental avulsion, 1; tonsillitis, 3; typhus fever (twelfth day), 1; and probable erysipelas, 2.

Sex.—Males, 44; females, 9; infants (sex not stated), 5.

Age.—Maximum, sixty-six years; minimum, three months; not stated in four. Of the remaining fifty-four, two were below one year, four from one to five, four from five to ten, four from ten to twenty, twenty-two from twenty to thirty, six from thirty to forty, six from forty to fifty, five from fifty to sixty, and one over sixty.

It is easy to see why men are more frequently attacked than women, since they are, as a rule, more often exposed to all kinds of infection. It is somewhat striking that forty per cent. occurred during the third decade of life.

Occupation.—Roser states that the majority of cases occur among soldiers, but this does not seem to be true. All classes seem affected alike. In the cases tabulated scarcely any reference is made to this point.

Results.—Recovered, 33; died, 25.

Bacteriology.—The results of culture experiments are recorded in only nine cases, inoculation being made from the evacuated pus or from the tissues—viz.: *Streptococcus pyogenes*, 4; *Staphylococcus pyogenes aureus*, 1; *Staphylococcus pyogenes albus*, 1; erysipelas coccus, 2; and in one instance an indeterminate microbe, a little longer and narrower than the *Bacillus coli communis*. It was, however, clearly distinguishable from the latter by culture reactions.

Treatment.—Outside of purely surgical procedures most of the plans of treatment which have been followed possess for us merely an historical value. They include the application of ichthyol ointment before incision, carbolic-acid injections several times daily with subsequent massage of the neck, local bloodletting, leeches and emetics, calomel and an iron spray to the throat, poultices with leeches or blisters, and antimony and ipecac internally. In three there was a spontaneous opening of the abscess; of these three, two recovered and one died, the spontaneous discharge in the latter having been followed by an aggravation of all the symptoms, especially dyspnœa, and death having ensued apparently from suffocation. In one other case a gradual disappearance of the cervical swelling, with recovery, is noted. In fifteen no statement is made referring to treatment, and of this group all but one proved fatal.

Passing to the surgical treatment, we find that in twenty-one incision was followed by escape of pus; in three others no pus escaped; in two, pus appeared on the second and fifth days, respectively, after incision. In five the results of incision are not stated. In one instance incision was made by the cautery.

With our modern surgical conceptions there can be but one justifiable procedure—namely, that embracing early incision, subsequent rigid antisepsis, and general supportive treatment. In commenting upon a case reported by another writer, in which there was a difference of opinion as to the correctness of the diagnosis made by the latter, Gerster has expressed sound opinions worthy of quotation. "In angina Ludovici," he says, "there is great necessity of early and ample incision. The object is not so much to evacuate pus as to relieve tension." He regards the submaxillary gland as the focus of mischief. He attaches practically a pathognomonic importance to the fact that pressure over the œdematous area rarely elicits pain except directly over the gland. Even if the patient is unconscious such pressure will cause unmistakable signs of distress, and if these appear delay is no longer justifiable. For the operation anæsthesia is of course necessary. "There being no 'pointing,' as in an ordinary abscess, we must first expose the entire area of the gland. In a typical case it will be found more or less disintegrated, and inside its original connective-tissue envelope is ichorous fluid or thin offensive pus."

Logical also is his explanation of why in these cases fluctuation is so long delayed. We have to deal with a rapidly destructive process, the products of which are penned up within a fibrous capsule and which presents septic necrosis as its leading feature. The tension to which the tissues are subjected is accordingly very great, as is evidenced by the dense and deep-seated œdema. As a second stage of the morbid process we may have an emulsification, so to speak, of the primarily necrosed elements. Early incision, therefore, liberates only ichor, while pus may form later, but in any event the early incision relieves tension and therefore greatly lessens the dangers of pressure, suffocation, or laryngeal œdema.

A deep lateral incision over the submaxillary region is advocated by Delorme, but this is, as above indicated, a blind proceeding. Operation through the mouth permits the danger of secondary infection, and we can not subsequently carry out a sufficiently antiseptic irrigation. An incision in the median line externally may escape the foci of purulent formation and deposit. Hence the lateral incision should be preferred, and we must be sure that it goes through the mylo-hyoid muscle, as thereby alone do we reach the seat of purulent accumulation.

Note.—Since this paper was finished attention has been called to the subject by Dr. Felix Semon, of London. In a recent paper he asserts the probable pathological identity of various forms of acute septic inflammation of the throat, hitherto variously called acute œdematous laryngitis, œdema of the larynx, erysipelas of the pharynx, phlegmonous pharyngitis, and angina Ludovici. He maintains that all of these diseases merely represent degrees, varying in virulence, of one and the same process. The questions of primary localization and subsequent development depend in all probability on accidental breeches of the protecting surface through which the pathogenic microbes causing the subsequent events find an entrance. It is, according to him, positively impossible to draw at any point a definite line of demarcation between the purely local and more complicated or between the œdematous and purulent forms. His general view is summed in the statement that this theory "constitutes a simple clinical application of general bacteriological principles to a certain group of septic inflammations."

A Judgment on a "Vitapath."—In pronouncing sentence on one of the so-called "vitapaths" for practising medicine without a license a Cincinnati judge recently delivered himself of the following language: "Men who knowingly go into a sick-room and prevent anything being done for a dying man by silly incantations and laying on of hands are responsible for his death and ought to be on a par with a murderer in the eyes of the law. God help the dying man who relies upon you or any of the so-called graduates of quackery. You speak of 'vitapathy' being of higher power than medicine, and you say you ordain ministers at the same time you matriculate 'vitapathic' physicians. Your methods are an insult to intelligence, their practice is a criminal abuse of ignorance, and your college a disgrace to civilization."—*Western Druggist.*

THE RELATION OF
VASO-MOTOR DISTURBANCES TO DISEASES OF THE UPPER AIR-TRACT.*

By F. H. BOSWORTH, M.D.

The first stage of an inflammatory process is dilatation of blood-vessels as the result of vaso-motor paresis followed by the escape of liquor sanguinis. Inflammation, however, is a progressive phenomenon and not usually stationary. By clinical observation we are made familiar with cases in which the apparent lesion constitutes this first stage of inflammation. It is a stationary condition and not progressive. We have been taught to regard these manifestations as the result of vaso-motor disturbances. They manifest themselves in the air-tract in the form of hay fever, nasal hydrorrhœa, asthma, etc. We also find them in the skin and other organs. These disturbances, furthermore, are usually circumscribed in extent, invading a limited area of the integument or of the air-passages. In the search for a reasonable cause for the development of these vaso-motor disturbances we are largely compelled to theorize.

One of the earliest and perhaps most universally accepted theories is that they are reflex in character. As I have repeatedly argued before this association, I think that as we become more familiar with the diseases in the upper air-tract we will in many cases be disposed to abandon this somewhat indefinite and obscure term reflex and adopt the theory that many of the so-called reflexes are the direct result of morbid action upon either the nerve centres or the tissues involved in the inflammatory action. I speak, of course, now only with reference to the vaso-motor disturbances observed in the air-passages. The early investigations of Ludwig and Thiry seem to indicate that general vaso-motor control is presided over by a single centre in the medulla. The later researches, however, of Goltz, Vulpian, and Schlesinger have shown that there are secondary centres of vaso-motor control found in the gray matter of the spinal cord as far down as the lumbar region, which exercise control over limited regions of the body.

That these centres are capable, however, of independent reflex action in the same sense that the ordinary nerve centres of the spinal cord are known to be, has not, so far as I know, been demonstrated by physiological experiment. Nor do I think that clinical observation of these processes warrants us in assuming this. I therefore would take issue with the view that vaso-motor disturbances are always reflex in character. A favorite theory maintained by many of us in times past is that an ordinary chronic inflammatory process in the mucous membrane of the upper air-tract, with its attendant vascular plethora, so far weakens the blood-vessels that they are thus rendered more susceptible and thus become the seat of vaso-motor weakness. That this is true I do not question, for it is a view that I have long maintained; but this does not serve to explain these manifestations. The local inflammatory process is the contributory cause and not the exciting cause.

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* Read before the American Laryngological Association at its seventeenth annual congress.

A third explanation remains, and that is that vaso-motor disturbances are really the result of some localized morbid process acting directly upon the vaso-motor centre in the medulla or upon some of the secondary centres distributed in the gray matter of the cord. This is a view first made prominent, I think, by Schmiegelow in his admirable monograph on asthma, in which he maintained that the true source of this affection was to be found in some morbid condition of the medulla oblongata, although he leaves the question in something of obscurity as to what this special localized condition may be.

I do not know that I can throw much light on the subject, and yet in a review of a large number of cases of ethmoid disease—something like a hundred and fifty—which have been under my personal observation, I have found that between ninety and a hundred showed marked evidences of vaso-motor disturbances in the air tract, either in the form of hay fever, asthma, or nasal hydrorrhœa. Here we have a simple explanation of the occurrence of these so-called neuroses of the air-tract, without entering upon the obscure question of reflex action. The ethmoid bodies, as we know, are composed of a mass of honeycomb cells, separated from the brain by a very thin partition of bone, and, when they are the seat of inflammatory action, the first and most prominent condition consists of intracellular pressure. This pressure is apparently exerted in every direction, crowding upon the os planum and producing the distressing eye symptoms with which we are familiar; crowding upon the base of the brain and producing that curious symptom which has been termed aprosexia, one of the most common and constant symptoms of the disease. That this is due to certain disturbances in the circulation of the brain, and possibly to some slight pressure upon that organ, is shown by the fact that the function of the brain is notably impaired. These patients complain that they can not transact business in a clear-headed way, and describe a sensation of a blanket resting over the brain which interferes with its functions.

As numbers of instances in my own experience have shown, the removal of this intracellular pressure is immediately followed by the greatest relief. The other point toward which this intracellular pressure is exercised is toward the nasal cavity, the point of least resistance, and here we find the ethmoid cells burrowing, as it were, into the middle turbinated bone or crowding it forward into the nasal cavity, forming that large shell like mass which we recognize as characteristic of ethmoid diseases. The surface of this protruding mass is usually covered with myxomatous tissue, and in other cases this same tissue is crowded out beneath the body, forming the ordinary nasal polypi. Here again we confront an old theory that nasal polypus is the cause of hay fever and asthma by reflex action. This may possibly be true in certain cases.

But I believe a more tenable theory to be that the primary cause both of the polypus and reflex disturbances is to be sought in the inflammatory process involving the lining membrane of the ethmoid cells, and that this results in the disturbance of the circulation at the base of the brain and the medulla together, with direct pressure upon either the primary or secondary vaso-motor nerve centres there found.

ECHINOCOCCUS DISEASE IN THE UNITED STATES.

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The following table has been carefully compiled from all available sources to show the extent in the United States of echinococcus disease both in man and among the domesticated animals. It is not intended to give a *résumé* of all the cases of this often fatal parasitic disease described in the United States literature, but to eliminate all those of really foreign origin which have swelled the index on this subject to a degree incompatible with the actual scarcity of the disease. Osler (1882) collected sixty-one cases of this disease for this country and Canada, and twenty-four additional cases between 1882 and July, 1891. The statistics in his text-book are based on these eighty-five cases. Many others were museum specimens, or not reported in the literature. Several of my cases, I think, were in the *Transactions of the Philadelphia Pathological Society.*

The case recorded by Allaben is deserving of special notice on account of the extent of infection. The patient, a German woman, had had a laparotomy performed, with removal of many echinococcus cysts, in the Greifswald Hospital, shortly after which cysts were passed *per rectum.* At that time the case was diagnosticated as echinococcus of the mesentery and omentum; the liver was not affected. The necropsy in this country showed stomach and intestine inseparably united; six hydatid tumors attached to the bladder at various points; one hard tumor in the right side of the pelvis; one large one in the hepatic capsule adherent to the parietal peritonæum; spleen contracted and inclosed in a mass of tumors, and bound to them by inflammatory formations; one exterior renal cyst; tumors on the omentum under the umbilicus; one under the ensiform cartilage, with its origin in the omentum and adhering to the liver; tumors in various parts of the peritonæum of the abdominal walls; tumors in the diaphragm adhering to the base of the lung on each side; small tumors in the pericardium at the base of the left ventricle; two in the pericardium over the right auricle; one very small tumor loose in the pericardium. The liver, usually the commonest organ to be affected, was in this case the least infested.

Dean's case of echinococcus multilocularis of the liver is worthy of note, occurring in a native of Schwangau, Bavaria, a region noted for this form of the disease. It suggests reason for regret that the other cases occurring in this country among Germans were not traced to some particular section in Germany.

Herff has been credited with but one case in man, owing to the fact that he does not state how many he observed. There were, however, probably more than one. His statement that he has found echinococcus in all Texas dogs examined is open to challenge, even though he professes to have found hooklets in every case.

SUMMARY OF CASES IN THE UNITED STATES.

Date of pub.	Journal.	Volume or number and page.	Observer.	Position.	Nationality or color.	Sex.	Age.	City.
1838	*Boston Med. and Surg. Jour.*	Vol. xviii, pp. 37–42.	Alexander.	Cyst in liver.	Foreigner.	M.	35	Danville, Vt.
1845	*Path. Anatomy* (Gross).	Second edit., p. 662.	Gross.	Cyst in liver; rupture into peritonæum.	....	M.	35	Cincinnati.
1847	*N. Y. Jour. of Med.*	Vol. viii, pp. 247, 248.	Platt.	Hydatid *in utero.*	....	F.	24	New York city.
1853	*N. Y. Med. Times.*	....	Webber.	Cyst in liver.				
1856	*Med. and Surg. Reporter.*	Vol. ix, pp. 49–61.	Smith.	Cole's hydatids *in utero*; Monro's hydatids in ovaries.	....	F.	..	Newark, N. J.
1858	*N. Am. Med. and Chir. Rev.*	Vol. ii, p. 506.	“	Echinococcus in lung.	....	F.	..	Philadelphia.
1859	*Boston Med. and Surg. Jour.*	Vol. lxi, p. 279.	Minot.	Tumors in liver. Echinococcus expectorated.	....	F.	35	New Orleans, 1856. Marblehead, 1857.
1861	*Am. Med. Times.*	Vol. ii, p. 376.	Sands.	Cyst in fascia of neck.	....	F.	Adult.	New York city.
1864	*Pacific Med. and Surg. Jour.* (San Francisco).	Vol. ii, pp. 264–266.	Simmons.	Tumor in stomach.	....	M.	10	Sacramento, Cal.
1868	*Am. Jour. of the Med. Sci.*	Vol. lvi, pp. 159, 160.	Ford.	Hydatids *in utero.*	Mulatto.	F.	42	Washington, D.C
1871	*Trans. of the Path. Soc. of Phila.*	Vol. iv, pp. 38–40.	Hutchinson.	Echinococcus in liver and pelvis.	French.	M.	32	Philadelphia.
1872	*Med. and Surg. Rep.* (Phila.).	Vol. xxvii, pp. 143–145.	Sherard.	Hydatid passed *per rectum.*	....	F.	29	Mobile, Ala.
1873	*Trans. of the Path. Soc. of Phila.*	Vol. iv, pp. 98, 99.	Tyson.	Liver.	....	M.	32	Philadelphia.
1874, 1875	*Am. Med. Weekly.*	Vol. i, pp. 79–81.	McKinnon.	Bladder.	....	F.	..	Selma, Ala.
1877	*St. Louis Med. and Surg. Jour.*	August, vol. i, pp. 420–424.	Dean.	Multilocular cyst of liver.	Bavarian.	M.	39	St. Louis.
1878	*Virginia Med. Monthly.*	Pp. 282–284.	Fauntleroy.	Hydatids of kidneys.	....	..	45	Staunton, Va.
1879	*Trans. of the N. Y. Path. Soc.*	Vol. iii.	Jacobi.	Cyst in liver.	....	..	..	New York city.
“	“ “	“	Metcalfe.	Cysts in peritonæum (gastro-splenic), attached to spleen, liver; one in pelvis.	....	F.	29	“ “
“	“ “	“	McCready.	Echinococcus in common bile duct.	....	M.	Old.	“ “
“	“ “	“	Loomis.	Cyst in liver.	....	M.	38	“ “
“	“ “	“	Keys.	Cyst in liver.	English.	M.	..	“ “
“	“ “	“	Jacobi.	Cyst in right lobe of liver.	....	F.	29	“ “
“	“ “	“	Cory.	Two cysts in right lobe of liver.	German.	M.	..	“ “
“	“ “	“	Finnel.	Cyst in right lobe of liver.	....	M.	27	“ “
“	“ “	“	Van Buren.	Cyst in liver.	....	..	..	“ “
“	“ “	“	Clark.	Cyst in liver.	....	..	..	“ “
“	“ “	“	“	Echinococcus vomited from liver or omentum.	....	F.	Adult.	“ “
“	“ “	“	“	Tumor in common bile duct.	....	M.	Old.	“ “
“	“ “	“	“	Probably liver.	....	..	..	“ “
“	“ “	“	McCready.	Cyst in liver.	....	..	..	“ “
“	“ “	“	Dean.	Multilocular cyst of liver.	Negro.	..	..	“ “
1880	*N. Y. Med. Record.*	Vol. xviii, pp. 346, 347.	Ainsworth.	Cyst in lung, spleen, and bladder.	Pole.	M.	40	Fort Vancouver, Wash.
“	*Med. and Surg. Reporter.*	Vol. xlii, pp. 290, 291.	Polk.	Cysts in gastro-hepatic omentum.	....	F.	Adult.	New York city.
1881	*Am. Jour. of the Med. Sci.*	October, p. 377.	Fenger.	Cyst in lung.	Italian.	M.	37	Chicago.
“	*St. Louis Med. and Surg. Jour.*	Vol. xli, pp. 492, 493.	Pollak.	Bladder.	....	F.	26	St. Louis.
1886	*Med. News* (Phila.).	Vol. xlix, pp. 78, 79.	Whittaker.	Echinococcus in liver.	German.	M.	60	Philadelphia. (?)
1890, 1891	*U. S. Marine-Hosp. Serv. Rep.*	Vol. xlix, pp. 147–149.	Kinyoun.	Cysts in liver, kidneys, and bladder.	Swede.	M.	38	New York city.
1891	*N. Am. Practitioner* (Chicago).	Vol. iii, pp. 612–617.	Allaben.	Pericardium, etc.; very general infection.	German.	F.	52	Argyle, Ill.
1892	*Am. Jour. of the Med. Sci.*	October, pp. 485–486.	Richardson	Cyst in liver.	....	M.	32	Boston. (?)
“	“ “	“ pp. 412–422.	Mudd.	Echinococcus of brain.	....	F.	12	St. Louis.
1894	*Texas Med. Jour.*	Vol. ix, pp. 613–616.	Herff.	Three times in liver, once in extensors of thigh, once in kidney and bladder, once in eye.	....	..	..	San Antonio.
“	*N. Y. Med. Record.*	Vol. xlvi (No. 4), p. 167.	Hartwig.	Cyst.	Italian.	M. (?)	..	Buffalo, N. Y.
1882	*Am. Jour. of the Med. Sci.* (Osler).	Vol. lxxxiv, pp. 475–478.	Bernays.	Echinococcus expectorated from lungs.	English (from Honolulu).	M.	Adult.	St. Louis.
“	Do.	....	“	Cyst in liver burst into bowels.	German.	F.	Adult.	“
“	*Am. Jour. of the Med. Sci.*	No. 84, pp. 475–478.	Hyndman.	Echinococcus of liver.	....	..	..	Cincinnati.
“	“ “	“ “	“	Echinococcus of brain.	....	..	..	“
....	....	....	Ogden.	Cyst in liver.	Foreigner.	F.	Adult.	New Orleans.
....	Unpublished.	....	Van Cott.	Liver.	....	..	..	Brooklyn, N. Y.

The following cases, specimens in museums, were published by Osler in the *American Journal of the Medical Sciences* (1881), vol. lxxxiv, pp. 475–478:

	Number.	Observer.	Position.	Nationality or color.	Sex.	Age.	City.
Army Med. Museum, Washington, D. C.	No. 8014.	Miner.	Echinococci of brain.	Colored.	M.	Adult.	Alexandria, Va.
Do.	No. 8089.	Bond.	Cyst in liver.	Light mulatto.	M.	51	Washington, D. C.
Museum of the U. of P.*	Jar. P. C. 46, vol. i, G. B. Wood cabinet.	....	Cysts from liver.				
" "	....	....	Cyst of spleen.				
Wistar.—Horner Collection (U. of P.).	....	....	Cyst in abdominal wall.	English.	M.	Lad.	
Museum of the U. of P.	....	....	Cyst in liver.				
Museum of Pennsylvania Hosp.	No. 1382^{50}.	....	Cyst in liver.				
Do.	No. 1382^{55}.	....	Cyst (multiple) in liver.	French.	M.	Lad.	
Do.	....	....	Cyst in liver.	Italian.	..	55	Philadelphia.
New York Hosp. Museum.	No. 932.	....	Cyst in liver.	....	..	......	New York.
" " "	No. 933.	....	One in abdominal walls.				
" " "	No. 934.	....	One in surface liver.				
" " "	No. 935.	....	Third loose in peritoneal cavity.				
" " "	No. 936.	....	Fourth in pelvis.				
Bellevue Hosp. Museum.	No. 937.	....	Cyst in liver.	....	..	......	"
" " "	No. 865.	....	Cyst in liver.	....	..	......	"
" " "	No. 866.	....	Cyst in liver, suppurating.	....	..	......	"
Museum of the U. of N. Y.	No. 867.	Loomis.	Cyst of liver (large).	....	..	......	?
Warren Anat. Museum.	No. 2381.	....	Cyst of liver.	....	..	......	?
" " "	No. 3773.	....	Echinococcus discharged from intestine.	....	..	......	?
" " "	No. 2156.	....	Cavity in apex of left lung, containing echinococcus.	....	..	......	?
" " "	No. 3871.	....	Cyst in liver.	....	M.		

* Means that the author from whom they were obtained is not sure that they are American.

1894	*Texas Medical Journal.**	Herff.	Muscles and liver.	Jack rabbit.	San Antonio, Texas.
....	" " "	"	Found in all dogs dissected.	Dogs.	" "
....	B. A. I. records.	Day.	....	Pigs.	St. Louis.
....	....	Welch.	Hydatids; 3 cases.	Hogs.	Maryland.
....	B. A. I. records.	Moore.	" 2 "	......	Washington, D. C.
....	" "	Stiles.	" 1 case.	Cattle.	Nebraska.
....	" "	Curtice.	Hydatids; 1 case of adult.	Dogs.	Washington, D. C.
....	" "	Wheeler.	Livers of 117 out of 2,000.	Hogs.	New Orleans.
....	" "	Buckingham.	Liver.	Camel.	Washington, D. C.
....	" "	Osler.	Six or eight obtained from occasional visits to butchers' stands.		
....	" "	"	Liver with two cysts.	Cat.	
....	" "	Dean.	Considerable number of hogs killed in St. Louis affected.	Hogs.	St. Louis.

* Herff must beyond question refer to *Cœnurus serialis* and *Cysticercus pisiformis* in the rabbit. It is more difficult to determine what form he found in the dog, but in all probability he would find *Tœnia serialis*, *T. serrata*, *T. marginata*, and *Dipylidium caninum*.

The infrequent occurrence of this disease may lead some practitioners to question its importance. Hence it might be well to call attention to the case of Mudd, of St. Louis, which furnished one of the most interesting cases of cerebral surgery on record in the United States, to say nothing of many interesting cases of retention of urine which were directly due to this rare parasite.

In only seven cases were the hooklets of *Tœnia echinococcus* reported in corroboration of diagnoses, and one of these was conceded to be doubtful. In this connection it seems advisable to consider the question of submitting to experts for determination all specimens of supposed hydatids, in order to perfect our knowledge concerning the disease, for the general impression seems to be that anything resembling a bladder is a hydatid cyst.

In summing up, we find that, out of sixty-seven cases in man recorded in this country, one was in a Swede, one in a Pole, two in French persons, three in English persons, three in Italians, and five in Germans, while two patients were given as simply foreigners; two were negroes, two mulattoes, while the remaining were unstated. Thus we have, out of sixty-three cases among whites, seventeen in foreigners; the nationality of the remaining whites not being stated leaves room for a possible greater number of foreigners. Again, twenty-four cases were recorded as in males and seventeen in females; but, as in the remaining twenty-six the sex was not given, no value can be attached to these figures, though they at first seem to contradict foreign statistics, which place the percentage among females far above that of males.

The following is the geographical distribution:

New York	24	Louisiana	1 or (2)?
Missouri	4	Massachusetts	1
Pennsylvania	3	California	1
Ohio	3	New Jersey	1
Alabama	2	Vermont	1
Virginia	2	Washington	1
District of Columbia	2	Texas	1 (+)?
Illinois	2		

New York State is evidently the only point of concentration, the remaining patients being well scattered.

As to age, though not given for all patients, I classify thus:

Age, years.	Sommer.	Auct.*
0 to 10	1	53
11 to 20	1	150
21 to 30	6	263
31 to 40	10	210
41 to 50	2	130
51 to 60	4	74
61 to 70	..	34
71 to 80	..	14
Over 80	..	2

The parasite was distributed over the various organs and parts as follows:

	Sommer.	Auct. †	Osler (pars).‡	Total.
Liver	39	942	7	988
Lung	5	140	..	145
Passed *per rectum*	2	...	..	2
Spleen	3	37	2	42
Brain	3	...	..	3
Abdominal wall	1	...	..	1
Vomited	1	...	..	1
Expectorated	2	...	..	2
Common bile duct	2	...	..	2
Bones	1	...	..	1
Bladder	4	...	..	4
Eye	1	...	..	1
Pericardium	1	...	..	1
Ovaries	1	...	..	1
Uterus	3	...	..	3
Trunk and limbs	..	4	..	4
Kidneys	3	123	..	126
Neck (fascia)	1	...	..	1
Stomach	1	...	1	2
Extensors of thigh	1	...	..	1
Pleura	..	19	..	19
Circulatory apparatus	..	53	..	53
Cranial cavity	..	91	..	91
Spinal canal	..	13	..	13
Pelvis	3	70	2	75
Peritonæum and omentum	..	61	..	61
Mesentery and omentum	..	...	..	..
Female genital organs and mammaries	..	60	..	60
Male genital organs	..	9	..	9
Face, orbit, and mouth	..	41	..	41
Neck	..	18	..	18
Total	78	1,681	12	1,771

Osler's cases were divided as follows: United States of America, fifty-four; Canada, seven. In my summary, therefore, I find thirteen cases more in man for the United States than Osler recorded in 1882.

The Index Medicus.—Dr. George Thomas Jackson informs us that since the time of his last announcement he has obtained the following subscriptions:

The West End Medical Society, New York.
The Long Island Medical Society, Brooklyn.

Change of Address.—Dr. George J. Engelmann, from St. Louis to No. 336 Beacon Street, Boston.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, NOVEMBER 23, 1895.

THE TREATMENT OF PUERPERAL CONVULSIONS WITH VERATRUM VIRIDE.

It was an interesting and profitable discussion that followed Dr. Charles Clifford Barrows's recent accounts of two cases of puerperal convulsions in the treatment of which the use of veratrum viride had played an important part. It took place at a meeting of the Society of Alumni of Bellevue Hospital held on October 2d, and a report of it is presented in this number of the *Journal.* Dr. Barrows properly laid stress upon the use of veratrum viride in the treatment of puerperal convulsions—not that he fancied it was new, but rather, we presume, that it seemed in danger of being forgotten, for, he says, except for its enthusiastic advocacy by the late Dr. Fordyce Barker, he had not noticed that it was generally appreciated except in the Southern States. The discussion shows at least that the gentlemen who took part in it had not ignored the title of the remedy to be ranked high among the means of controlling the convulsive disorder under consideration.

Dr. Edgar's declaration that he did not believe there was any drug, with the possible exception of chloroform, that was of as much value as veratrum viride in eclampsia, coupled with Dr. Chandler's testimony to its efficiency, goes far to show that experienced obstetricians in general are less forgetful of the virtues of veratrum than its comparative inconspicuousness in current literature might lead one to suppose was the case. It is very sure that an overwhelming preponderance of our therapeutical resources does not reside in the novelties that have been introduced so profusely within the last few years—perhaps no preponderance at all. Although, not to mention the wholly novel medication to which bacteriological study has given rise, all our pure hypnotics and all our pure antipyretics have been known but a few years, it is much to be doubted if we have come to a knowledge within the last twenty-five years of a greater number of potent curative medicinal agents than were known before. It is natural and inevitable that the new drugs should figure more prominently than the old ones in periodical literature. We would not have it otherwise, for that would be a poor literature that should keep on reiterating well-known facts. There is room for discrimination, however; it is hardly to be gainsaid that occasionally a particular use of an old drug is in danger of being forgotten, and when that is the case a distinct service is rendered by whoever calls attention to it so pointedly as Dr. Barrows has to the value of veratrum viride in combating so fatal and frightful a disease as puerperal eclampsia. Such a course sets those who may have been forgetful or skeptical to making new trials of the agent in question, and may lead either to an undeniable confirmation or to a wholesome refutation of the convictions of our predecessors. It tends to certainty in therapeutics, which is the grand aim of medicine.

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* Signifies Krummacher, Böcker, Finsen, Neisser, Helm, and Wolff.

† This column contains the cases cited by Davaine, Böcker, Neisser, Finsen, and Madelung.

‡ This column contains the cases mentioned by Osler from Canada, and not included in my list. All of Osler's cases from the United States are found in my list.

MINOR PARAGRAPHS.

THE *PHARMACEUTICAL REVIEW.*

The *Pharmaceutische Rundschau*, a monthly journal of pharmacy published in New York, is nearing the completion of its thirteenth volume. In the November number it is announced that, beginning with the number for January, 1896, it will be printed in the English language and entitled the *Pharmaceutical Review.* We believe that under the new title it will be none the less influential than it has been thus far among pharmacists whose mother tongue is German, and that it will gain many new readers by the change.

THE WEATHER BUREAU'S STATISTICS.

The valuable observations of the Weather Bureau are now published in a serial entitled *Climate and Health*, edited by Dr. W. F. R. Phillips under the direction of the chief of the bureau, Professor Willis L. Moore, and published by the authority of the Department of Agriculture. The second number, containing a summary of statistics for the five weeks ending on August 31, 1895, comprises thirty-two quarto pages of text, twenty maps, and several full-page tables. It will doubtless prove of great value.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 19, 1895:

DISEASES.	Week ending Nov. 12.		Week ending Nov. 19.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	45	4	33	6
Scarlet fever	68	7	63	3
Cerebro-spinal meningitis	2	1	1	2
Measles	127	8	157	9
Diphtheria	28	46	225	23
Small pox	1	0	1	0
Tuberculosis	86	113	0	0

The Middle Tennessee Medical Association.—The third regular meeting was held in Shelbyville, on November 21st and 22d, under the presidency of Dr. J. S. Nowlin, of Shelbyville. The programme included the following papers: Organic Anæsthesia, with a Report of a Case, by Dr. Hazle Padgett, of Columbia; Tumors of the Bladder, by Dr. C. S. Briggs, of Nashville; Acute Pleuritis, by Dr. A. B. Ramsey, of McMinnville; Tumors of the Epigastric Region, by Dr. Richard Douglas, of Nashville; Hysterectomy, with a Report of a Case, and presentation of a specimen, by Dr. W. K. Sheddan, of Williamsport; The Failure of Post-partum Uterine Contraction, and its Consequences, by Dr. J. R. Buist, of Nashville; Neurasthenia, by Dr. Robert Pillow, of Columbia; Internal Squint, by Dr. G. C. Savage, of Nashville; The Treatment of Fractures involving Joints, by Dr. Hugh R. Miller, of Nashville; Placenta Prævia, by Dr. J. B. Murfree, of Murfreesboro; The Symptomatology of Typhoid Fever of Recent Years, by Dr. S. T. Hardison, of Lewisburg; The Abortive Treatment of Typhoid Fever, by Dr. A. M. Trawick, of Nashville; Water *versus* Atmosphere the Cause of Malignant Malarial Fever, by Dr. J. B. Cowan, of Tullahoma; Embolism, by Dr. W. A. H. Coop, of Lawrenceburg; Puerperal Septicæmia, by Dr. C. A. Abernathy, of Pulaski; A Report of a Case of Puerperal Septicæmia Complicated with Malaria, by Dr. B. B. Gracy, of Smyrna; The Use and Abuse of Atropine in Disease of the Eye, by Dr. L. B. Graddy, of Nashville; The Treatment of Wounds in Country Practice, by Dr. K. S. Howlett, of Bigbyville; The Use of Antiphthisine in Tuberculosis, by Dr. L. P. Barbour, of Tullahoma; Epiphysitis, by Dr. W. M. L. Coplin, of Nashville; Uterine Retro-displacements, by Dr. M. C. McGannon, of Nashville; Parasitic Skin Diseases—the Microscope as an Aid in the Diagnosis, by Dr. J. H. Mills, of Nashville; Fissura in Ano, by Dr. A. Bennett Cooke, of Nashville; and a paper by Dr. A. L. Macon, of Fredonia.

The New French Ministry, says the *British Medical Journal*, includes three representatives of the medical profession. M. Berthelot, the minister for foreign affairs, is a member of the Institute and of the Academy of Medicine; he took the M. D. degree in 1865. M. Viger, the minister of agriculture, and M. Combes, minister of public instruction, are also Doctors of Medicine. MM. Berthelot and Viger have each already formed part of several ministries. M. Combes, who now for the first time holds a portfolio, is vice-president of the Senate, in which he sits for the Charente Inférieure.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending November 16, 1895:*

Owens, T., Surgeon. Detached from Naval Station, Port Royal, S. C., and granted three months' leave. November 11, 1895.

Waggener, J. R., Surgeon. Detached from the Independence and ordered to the Mare Island, Cal., Navy Yard. November 12, 1895.

Bradley, George P., Surgeon. Detached from the Mare Island, Cal., Navy Yard and ordered to the Indiana.

Rothganger, George, Passed Assistant Surgeon. Detached from Naval Hospital treatment and ordered to the Independence.

Gardner, J. E., Surgeon. Ordered to Port Royal, S. C., Naval Station. November 13, 1895.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Fifteen days ending November 15, 1895:*

Fessenden, C. S. D., Surgeon. Ordered to proceed from Salem to Boston, Mass., for physical examination. November 14, 1895.

Carmichael, D. A., Passed Assistant Surgeon. Relieved from duty at St. Louis, Mo., and directed to proceed to Vineyard Haven, Mass., and assume command of service. November 1, 1895.

Brooks, S. D., Passed Assistant Surgeon. Relieved from duty at Chicago, Ill., and directed to proceed to St. Louis, Mo., and assume command of service. November 5, 1895.

White, J. H., Passed Assistant Surgeon. Granted leave of absence for twenty-three days. November 5, 1895.

Perry, T. B., Passed Assistant Surgeon. Granted leave of absence for thirty days. November 11, 1895.

Cobb, J. O., Passed Assistant Surgeon. To proceed from Port Townsend to Port Angeles, Wash., as quarantine inspector. November 1, 1895.

Stoner, J. B., Passed Assistant Surgeon. To proceed from Detroit, Mich., to Baltimore, Md., for temporary duty. November 1, 1895.

Gardner, C. H., Assistant Surgeon. To proceed from San Francisco, Cal., to Chicago, Ill., for duty. November 5, 1895.

Norman, Seaton, Assistant Surgeon. To proceed from Baltimore, Md., to New Orleans, La., for duty. November 1, 1895.

Thomas, A. R., Assistant Surgeon. To assume temporary command of service at St. Louis, Mo. November 1, 1895.

Greene, J. B., Assistant Surgeon. To proceed from Vineyard Haven, Mass., to Baltimore, Md., for duty. November 1, 1895.

Society Meetings for the Coming Week:

Monday, *November 25th:* Medical Society of the County of New York; Philadelphia Neurological Society; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *November 26th:* New York Dermatological Society; Buffalo Obstetrical Society.

Wednesday, *November 27th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

Thursday, *November 28th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

Births, Marriages, and Deaths.

Married.

Ayers—Lindsley.—In Washington, on Wednesday, November 20th, Dr. Edward A. Ayers, of New York, and Miss Joy Lindsley.

Crosson—Blaine.—In Washington, on Tuesday, November 12th, Dr. Henry J. Crosson and Miss Margaret Blaine.

Rhoades—Schmid.—In New York, on Thursday, November 14th, Mr. John V. Rhoades, son of Dr. Archibald Rhoades, of the United States Navy, and Miss Pauline Schmid.

Thomas—Larocque.—In New York, on Tuesday, November, 19th, Mr. Howard Lapsley Thomas, son of Dr. T. Gaillard Thomas, and Miss Adele Larocque.

Walsh—Loughran.—In Brooklyn, on Wednesday, November 20th, Dr. John E. Walsh and Miss Anna F. Loughran.

Whaley—Robertson.—In Charleston, S. C., on Thursday, November 7th, Dr. Thomas Prioleau Whaley and Miss Henrietta Righton Robertson.

Died.

Lennox.—In Brooklyn, on Thursday, November 14th, Dr. Richmond Lennox, aged thirty-four years.

Norris.—In San Francisco, on Sunday, November 10th, Dr. Basil Norris, United States Army (retired), aged sixty-three years.

Thurber.—In New Orleans, on Saturday, November 9th, Dr. John A. Thurber, aged sixty-six years.

Proceedings of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Seventeenth Annual Congress, held at Rochester, N. Y., Monday, Tuesday, and Wednesday, June 17, 18, and 19, 1895.

The President, Dr. John O. Roe, of Rochester, in the Chair.

(*Continued from page 633.*)

Ludwig's Angina.—Dr. J. E. Newcomb, of New York, read a paper on this subject. (See page 652.)

Dr. Daly said he desired to report in this connection a part of the clinical history of what he believed to have been the last illness of the late Dr. Rupaner, of New York city. From three to five weeks prior to this physician's death in New England he had been asked to see him professionally in Pittsburgh, where he was then sojourning, and had found him suffering from what he had diagnosticated as "sublingual phlegmon." The phlegmon appeared to be of the erysipelatous type and of the size of a large hen's egg, and all the tissues of the floor of the mouth were also enormously swollen, including the tongue. The mouth could not be closed; there was dribbling of very offensive sanious mucus, and there was a rather free offensive expectoration from a putrid bronchitis. The patient was apparently about sixty years of age, and seemed to be very greatly depressed mentally. No point of fluctuation could be detected, but it was decided to cut into the tumid tissues under the tongue, and he introduced a fasciculus of horsehair for drainage. On cutting into the tissues beneath the tongue, there was a flow of sanguinolent fluid, and from a deeper situation one of some very offensive sanguinolent pus. The horsehair was also inserted through this for drainage, and the parts were disinfected deeply with swabs moistened with a solution of carbolic acid. The next morning the patient was somewhat improved. A few days later he insisted on leaving the city for New York. The speaker said that he did not know the subsequent history of the case, but his opinion was that the doctor died of self-infection. The probable history of the case might be expected to be one of septic pneumonia following the conditions reported.

Dr. H. L. Swain, of New Haven, said that he had often thought that some of the cases mentioned in the paper, and classified as "Ludwig's angina," should, in the light of our present knowledge, be considered as examples of abscesses of the lingual tonsil. This tonsil, it was well known, was subject to all the phases of inflammation which were observed in the faucial tonsils. Two or three such cases had come under his notice, and the great degree of swelling of the tissues and glands of the neck might very easily simulate the appearances observed in a typical case of Ludwig's angina. He had quite recently treated a case of this kind successfully.

Dr. Wright remarked that there was nothing specific about the condition described as Ludwig's angina.

Dr. M. J. Asch said that it had been his lot to meet with two cases of Ludwig's angina, and in both there had been to him evidence of septic infection. There was inability to open the mouth, difficulty of breathing, with the unhealthy infiltration of the tissues seen in such infection. Both cases had occurred in young men. In one of them the inflammation had been diffused, and had been checked by free incisions, which had not evacuated pus, but ichorous and degenerated tissue. After the patient had recovered, examination of the mouth had shown a fragment of a tooth lying in its socket, having been broken in extraction. In the other case the affection had seemed to have arisen from an acute amygdalitis. The inflammation had proceeded until it involved the whole of the neck. Glandular abscesses were opened below the jaw and just above the clavicle. Both cases were extremely grave, but the patients had eventually recovered. He had become impressed with the fact that the so-called "Ludwig's angina" was essentially septic in character, and was not a specific disease.

Dr. NEWCOMB said that in many of the fatal cases death had been due to septic pneumonia. He was inclined to doubt if these cases were ever really abscesses of the lingual tonsil, because in Ludwig's angina the inflammation started in a different area. Ludwig's angina was an infectious disease *at a given site.* The speaker said that this whole subject had been an enigma to him until he had seen a case with Dr. Wright at the Roosevelt Hospital. On looking up the literature he had found a great deal of confusion, and for this reason he had endeavored to bring before the society a synopsis of the views that had been held. Dr. Semon's contention that all these different varieties of throat disease were examples of sepsis might be true; nevertheless the term "septic sore throat" was not sufficiently specific.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of October 2, 1895.

The President, Dr. PARKER SYMS, in the Chair.

Intra-uterine Rupture of the Anterior Abdominal Wall, with Eventration in a Newly-born Child.—Dr. A. BROTHERS reported such a case, and presented a photograph. (To be published.)

Puerperal Eclampsia treated by Duehrssen's Incisions and Veratrum Viride.—Dr. CHARLES CLIFFORD BARROWS reported two cases of puerperal eclampsia. The first case was that of Bertha J., a German, twenty-two years old, and a primipara. She had been admitted to Ward 23, Bellevue Hospital, on July 29, 1895, at 10.45 A. M. She had always been strong and healthy until that illness. She had menstruated last on December 10, 1894. About June 15th it had been noticed that she was passing a large quantity of urine and was obliged to get up a number of times each night to empty her bladder. No examination of the urine had been made. Her feet and legs had become swollen a week prior to her admission to the hospital. Her illness had begun on Sunday evening. July 28th, at eight o'clock. A half hour before this her husband had left her after a quarrel. She had become much excited, and had felt a peculiar sensation in her head—more confusion than pain. She had started to visit her physician, but had fallen before reaching the door of her room. She had then become unconscious and had had convulsions at intervals of twenty minutes until twelve o'clock. She had vomited freely, and from this time until six o'clock the next morning, July 29th, the convulsions had occurred every five minutes. She had passed no urine.

She had been brought to the hospital from her home in an ambulance and had had a severe convulsion on her way. This had been controlled by chloroform. She had been admitted to Ward 22 at a quarter to eleven o'clock, fifteen hours after the first convulsion, in coma. Her face at that time had been deeply flushed, the respiration stertorous, the pulse tense and bounding. The temperature was 105·4°, pulse 126, respiration 40; the pupils contracted in size to a pin point. Magendie's solution, seven minims, and two minims of a one-per-cent. solution of nitroglycerin, had been given hypodermically, and an ounce of urine had been drawn with a catheter. This had been found to contain albumin, ninety per cent., with granular and hyaline casts. A simple enema had been given with a good result. At twelve o'clock the patient had been etherized for delivery. The head of what had evidently been a seven or eight months' fœtus was presenting in the lateral occipito-anterior position. The internal os uteri had been well dilated, but the external os would just admit the tip of the index finger, and had been rigid and evidently difficult of dilatation. With a pair of angular curved scissors incisions had been made up to the utero-vaginal junction—laterally, anteriorly, and posteriorly. These incisions had been made freely, and had given ample room for the passage of the child without further dilatation. As the head had engaged, delivery had been accomplished with the forceps in eight minutes. A careful examination had shown that no tearing had taken place into the uterine tissue beyond the point of incision. There had been some bleeding from the left lateral incision, and a single catgut suture had been introduced to control this. The uterus and vagina had then been packed with iodoform gauze. The patient had then been put to bed and had done well until two hours after the operation, when she had again been seized with a violent convulsion. Two drops of croton oil had been given on the tongue, and Norwood's tincture of veratrum viride had been ordered hypodermically, five minims every hour, until four doses had been given. Four hours later—*i. e.*, six hours after the operation—her pulse had been 88 and soft, her respirations 22, and the temperature 100° F. There had been no secretion of urine up to the time the veratrum had been given. During the following twenty-four hours there had been no more convulsions, and there had been drawn by catheter urine to the amount of ninety ounces. The patient had been delirious during this period, but had then become rational and had slept quietly. During the next twenty-four hours a hundred and eight ounces of urine had been drawn. This had had a specific gravity of 1·015 and had contained a trace of albumin, with hyaline and granular casts.

The gauze packing had been removed on the fifth day. The patient, from this time on, had made an uninterrupted recovery, and been discharged from the hospital on August 17th. The cervix had then shown very little evidence of the incisions that had been made in it, slight notches on the four sides being all that was left.

The second case was that of Helen Z., a German, thirty-five years old, who had been admitted to Ward 23 at 11.30 P. M. of the same day on which the patient of the previous case had been admitted. Her family and personal history up to the date of her marriage at nineteen had been good. She had been delivered of seven children, and her labors had been easy, with one exception, when the child had weighed sixteen pounds. All her deliveries had been without instruments. The patient had nursed her seventh child and, not menstruating, had not realized that she was pregnant until about June 1st, when she had felt quickening. Three weeks before her coming to the hospital her feet and legs had become swollen to an enormous size. She had had headache constantly, and had passed a large amount of urine. She had been seized with a convulsion, and had become unconscious on the evening of July 30th. She had been brought to the hospital in an ambulance soon afterward. She had had a convulsion before reaching the hospital. In order to control this seizure, chloroform had been administered by the ambulance surgeon.

When she was admitted seven minims of Magendie's solution were given hypodermically, and croton oil *per os.* A small quantity of urine drawn from the bladder had been solid with albumin. Her temperature on admission had been 100·2°, pulse 120, and respirations 30. She had been etherized and the os dilated by rapid manual dilatation. A small child had been extracted by version at 2.30 A. M. by the house physician, Dr. James. She had had two severe convulsions following delivery, and two hours later her temperature had been 102·4° F., her pulse 140, and her respirations 24. She had then been given tincture of veratrum viride, five minims, every half hour, hypodermically. During the first eighteen hours after her admission she had passed by catheter seven ounces of urine. In the following twenty-four hours after the use of the veratrum viride she had passed by catheter ninety-six ounces of urine containing ten per cent. of albumin, with hyaline and granular casts. Her pulse had dropped to 80, her temperature to 96·4°, and her respirations to 12. The patient up to that time, thirty-six hours after her delivery, had remained unconscious. She had then regained consciousness, and from that time on had made a perfect recovery, having been discharged from the hospital on August 17th.

Dr. Barrows said that in reporting these two cases occurring in his hospital service in the same day, in addition to the rapid method of successfully emptying the uterus—the one by Dührssen's deep incisions, the other by *accouchement forcé*—he desired to call attention particularly to the action of veratrum viride in these cases. This drug had been largely employed with great success throughout the Southern States for a number of years in such conditions as those described, but had not, he believed, met with the proper recognition among us here. It would be noticed that each of these two patients had had several convulsive seizures after the uterus had been emptied. The delivery in either case had not been followed by any urinary secretion until after the administration of the veratrum, when it had become very copious, and the patient had immediately begun to improve.

Some two years ago he had seen in consultation at Short Hills, N. J., a case of eclampsia occurring six hours after delivery, with total suppression of urine. The usual remedies, including the free use of nitroglycerin, had been tried without success, and the patient had seemed in a fair way to die at the time he had first seen her. Under the hypodermic use of veratrum, however, the kidneys had begun to act at once, and the patient had shortly become conscious, there had been no more convulsions, and she had made an excellent recovery.

Dr. J. Clifton Edgar said that about five years ago Dührssen had first published his article advocating the use of deep incisions into the cervix. About two years later, after further experience with the incisions, and also some experience with manual dilatation, Dührssen's enthusiasm had become considerably dampened, and he had then advocated these incisions only in cases of extreme emergency. The speaker said that he had recently reported three cases of his own. His experience with them had led him at first to be enthusiastic over the deep incisions, but since then he had also learned that this method was more limited than he had at first thought. He now believed that it was only in very exceptional cases that the obstetrician was justified in dividing the lower uterine segment from the external os to the utero-vaginal junction. Out of a large number of eclamptic cases seen in the past five years, he could not recall more than two or three in which it had seemed to him that such a method was applicable. In cases suitable for the operation, as the patients came into our maternity hospitals, they were apt to be already infected, and consequently the method was not by any means free from danger. The cases of puerperal eclampsia received at Bellevue Hospital were almost all virulent and desperate, and hence the method was oftener resorted to there than in other institutions. In the cases in which he had employed it the method had been elected simply to save the forty-five or sixty minutes which would be consumed in dilating the cervix manually. The operation was extremely limited in its usefulness, as it was only applicable to cases in which the internal os was already dilated; there must be this preliminary dilatation. Unfortunately, this preliminary dilatation consumed much time. When this amount of dilatation had been accomplished, there was no longer any true cervix left, and manual dilatation could be effected in about forty-five minutes.

He had been greatly interested in the remarks about the administration of veratrum viride in puerperal eclampsia. Personally, he did not believe any drug, except possibly chloroform, was of as much value as veratrum viride in eclampsia. He had not dared to use it in cases in which the pulse was intermittent or soft, but he had employed it freely in those where the pulse had been tense and rapid. The action of the veratrum viride on the skin should not be overlooked. This was almost as prompt as its action upon the heart and kidneys, and by the free excretion through the skin the kidneys were greatly relieved. This, in his opinion, was much better than exciting the skin to action by using the hot-air bath. Dr. Mann had quoted before the American Gynæcological Society last May a case in which a teaspoonful of the plain tincture of veratrum viride had been given by mistake, and yet the woman had survived. Dr. Edgar said he recalled a case in which he firmly believed the life of the patient had been saved solely by the veratrum viride. This case had been seen in consultation with Dr. Haines. The plain tincture had been given hypodermically in ten-minim doses until the pulse had been reduced to sixty, and this had been continued until the pulse had shown a disposition to remain at this point without the help of the drug.

Dr. W. J. Chandler, of South Orange, N. J., said that he was surprised that the use of veratrum viride in these cases should be looked upon as a new treatment. Many years ago it had been a common treatment in the Orange Memorial Hospital. At one time a brother practitioner had told him that he was treating cases of puerperal eclampsia with teaspoonful doses of Norwood's tincture of veratrum viride, and that all the patients recovered. This physician had also said that he was not at all afraid of this heroic treatment, because if the patient received too much of the drug it would at once be rejected by the stomach. Influenced by this statement, the speaker said, he had decided to try the method. In 1879 he had been called to see a woman who had had convulsions before delivery. At the time he had first seen her, after delivery, the convulsions had been present, and she had been somewhat maniacal. As the patient had been unable to swallow, twenty-five minims of Norwood's tincture had been given hypodermically. About an hour afterward he had been hastily summoned to the bedside, and had found the respirations reduced to four and the pulse to forty. As the drug had been given subcutaneously, of course no relief could be expected from vomiting, as was usually the case. Under stimulation and appropriate treatment she had eventually recovered. In this case the excretion of urine had been increased, and the skin had been bathed in perspiration. This action of the drug he had noticed in all these cases. Since this time he had often used the drug very freely by the mouth, but he would warn against using it hypodermically.

Dr. Barrows said that his two cases seemed to him to illustrate very well the points that had been so well brought out by Dr. Edgar. As in the first case the patient had been *in extremis*, very rapid delivery had been essential, and hence the deep incisions had been employed. The other case, not having been so serious, had been an excellent illustration of a class in which these incisions should not be employed. In this case the whole cervical canal had seemed to be dilatable, although not dilated. No mention had been made of the effect of the veratrum viride on the skin in these cases, because prior to his reaching the hospital the house surgeon had applied the hot-air bath. The treatment, of course, was not at all new; he had been familiar with it long before he had begun the practice of medicine; nevertheless, with the exception of the enthusiastic advocacy of this treatment by the late Dr. Fordyce Barker, he had not noticed that it had been commonly adopted except in the South. It seemed to him that recently nitroglycerin had been relied upon too much in these cases.

Gangrene of the Appendix Vermiformis.—Dr. Barrows then presented two specimens from cases of gangrenous inflammation of the vermiform appendix. The first one had been removed thirty-six hours after the beginning of the attack. It had contained in a pocket a fæcal concretion about as large as a cherry stone, and there had been a perforation at this point. The patient had made an excellent recovery, and was to-day well.

The second specimen was of special interest, and was presented with the following history: Miss P., a trained nurse, while on duty during the night of August 5th had felt some discomfort about her abdomen, but she had continued on duty until ten o'clock the following morning. At this time she had had considerable pain in the right iliac region, with some tenderness and more or less nausea. Her bowels had been constipated. She had been seen by Dr. Carlisle, who had asked the speaker to see her with him at three o'clock in the afternoon of the 6th. Her temperature at that time had been 101·4° F., and the pulse 80. Examination had shown the abdomen slightly tympanitic and, in the right iliac fossa, tender to the touch. An ice poultice had been applied, and the patient had been given one fourth of a grain of morphine and one one hundred and fiftieth of a grain of sulphate of atropine hypodermically. The speaker had seen her at ten o'clock of the same evening, and had found the tenderness and tympanites to be increasing; the temperature had been 100°, and the pulse 74. At eight o'clock the following morning, about twenty-four hours after the beginning of the attack, the temperature had been 99° F., and the pulse 95; the abdomen quite tympanitic and tender, and the vermicular action of the intestines apparently absent. There had seemed to be more tympanites in the region of the appendix than in other parts of the abdomen. The patient had slept less than an hour during the night. Her facial expression had been anxious, and she had evidently been suffering acute pain. Preparation had been made at once for an operation, and at 10.25 the abdomen had been opened. There had been a slight escape of serous fluid. The small intestine had been distended, and its peritoneal coat in the cæcal region brightly injected. No lymph or pus had been found, and the appendix, somewhat enlarged and perfectly black, had been found free in the peritoneal cavity. Its mesentery had been tied off with catgut and the appendix removed. The mucous membrane had been gangrenous. The mucous membrane of the stump had been thoroughly cauterized with pure carbolic acid, followed by the actual cautery.

As the gangrene had extended well down to the cæcum, it had been turned in and the serous coat closed over it with catgut. The stump had been inclosed in an iodoform-gauze drain, thus shutting it off from the general peritoneal cavity, and the wound had been closed. The gauze had been removed on the fourth day. The patient had made an excellent recovery.

These cases, the speaker said, were interesting as illustrating that peculiar type of inflammation in which there was rapid gangrene of the appendix. As a rule, these patients showed but slight disturbance of pulse and temperature, and operations upon them were rarely successful, because they were postponed until it was too late, while the attending physician waited for the pulse and temperature to rise. In the first case there had been a fæcal concretion which had been supposed in some way to have interfered with the circulation and caused the death of the structure. But in the second case there had been absolutely nothing in the appendix; its lumen, of the size of a slate pencil, had been perfectly patulous, there had been no adhesions or constricting bands about it, and in no mechanical way had its circulation been interfered with; and yet within twenty-four hours from the first sensation of pain it had been found completely gangrenous!

Dr. Robert T. Morris said that he thought if Dr. Barrows would examine the arteries in the specimen he would find that a very rapid proliferating endarteritis had closed them. Rapid gangrene from this cause he had found to be quite common. A factor often overlooked was a gross cause of gangrene—the appendix becoming dislocated and twisted upon its mesentery and its circulation in this way cut off.

Dr. Barrows replied that he had intended to state that there had been no evidence of gross mechanical obstruction in his case.

Dr. J. F. Erdmann referred to a recent case of inflammation of the appendix that he had seen. A boy, while playing late one afternoon, had been suddenly seized with severe pain in the right iliac region. He had gone to bed, and on the following day the family physician had diagnosticated inflammation of the appendix and had sent for Dr. Joseph D. Bryant, who had referred the case to Dr. Erdmann. The temperature had been 102·5° and the pulse 144; there had been no abdominal distention whatever, and he had been apparently in good physical condition. Palpation had shown a small mass about as large as the end of the finger, and another mass leading from it of about the size of the little finger. On opening the abdomen, about a pint and a half of seropurulent fluid had escaped. At the operation it had been found that there was mechanical obstruction from twisting of the appendix upon itself at its distal extremity, and that at about half an inch from the cæcum there was a fæcal mass of about the size of a large pea. Between these two points a perforation had occurred, and through this fæcal matter was escaping. Drainage and counter-drainage had been established. Some improvement had been noticed for a few hours; then changes for the worse had set in rapidly, and in fifty-six hours from the time of operation he had died.

Dr. Chandler said that last month he had seen at the Memorial Hospital in Orange a young man who had been taken sick with inflammation of the appendix twenty-four hours previously. There had been considerable diversity of opinion among the hospital staff regarding the advisability of operating. The point which could not be decided had been as to whether or not the appendix was gangrenous. Notwithstanding the mildness of the symptoms, the appendix had been found to be gangrenous at its tip, although there had not been any perforation. Another case of gangrenous inflammation had been seen with a colleague a few days later, and in this one a perforation had been found, although the illness had only lasted two days.

Dr. Irving S. Haynes, in illustration of the rapidity with which perforation sometimes occurred, referred to the case of a young man who in the evening had been taken with severe pains in the right iliac region, had been sick all night, and who had in the forenoon of the next day walked a considerable distance to enter the Harlem Hospital. On the afternoon of the same day he had been in a condition of marked shock. He had been operated upon at this time, and the abdomen had been found full of liquid fæces and serum, and the appendix bent upon itself and perforated about half an inch from the cæcum. The appendix had been removed, the abdominal cavity freely washed out with sterilized water, and a wick of iodoform gauze left in the lower angle of the wound. The man had made an excellent recovery. The interesting point was that the illness had begun in the evening and the perforation had occurred before two o'clock the next afternoon.

Dr. Morris said that the complete absence of pain, after there had been pain at "McBurney's point," was a most important symptom of the occurrence of gangrene.

Dr. Erdmann said that he had shortly before seen a case in which there had been only slight pain in this region, and yet there had been extensive gangrene and perforation, with discharge of a fæcal mass of the size of a hazelnut into the peritoneal cavity. In this case there had been constant but very slight pain at the point referred to.

Dr. Barrows said that he had personally experienced the pain of gangrenous inflammation of the appendix. He had never felt any pain which could compare with that which he had suffered from the very beginning of the attack up to the time of the operation. At the operation the appendix had been found gangrenous and perforated. In his opinion, one of the best guides to the occurrence of gangrene of the appendix was the fall of temperature and the rise of the pulse, associated with an anxious expression, and the other signs of that condition of shock seen in grave abdominal disease.

Book Notices.

Syphilis in the Innocent. By L. Duncan Bulkley, M. D. New York: Bailey & Fairchild.

The aim of the author of this volume has been to present an exhaustive study of syphilis when innocently acquired in contradistinction to the disease contracted in the venereal act. To this end he and his assistants have diligently searched through the literature of the world, have consulted writings in many languages, and have derived their facts in the great majority of instances directly from the authors' articles, rarely using abstracts or second-hand descriptions. The result has been the production of a complete analytical bibliography up to January 1, 1893. The work is in no sense a clinical exposition of the signs and symptoms of the disease in any of its phases, but is a careful presentation of the main features of the cases reported by more than a thousand observers, giving the facts relative to the infected individual, the mode of infection, and, when possible, the source from which it was derived, together with the accessory circumstances.

A perusal of this work very clearly shows that it originated in results presented by the study of a hundred and thirteen cases of non-venereal syphilis seen by the author. Though such an experience is not at all exceptional to men who study syphilis on a large scale, and though there are undoubtedly men here and abroad who have seen even many more cases than the author, the latter has the decided advantage that he has kept careful records of his cases. These recorded cases are described in chapter iv, which we think would be a much more satisfactory one if it consisted of twenty rather than seventy-two pages. It may perhaps seem invidious to criticise so deserving a book, but one puts it down after careful reading with the conviction that a judicious compresssion of the text and a less elaborate and minutely technical arrangement of the various tables would have accomplished all that was required, and would have conveyed knowledge much more readily.

Syphilis of the innocent shows itself in its primary period in chancres more or less remote from the genital sphere; consequently in the majority of cases of extragenital chancres there has been no venereal or sexual transgression. The author studies in detail the modes of origin of unmerited syphilis, giving the facts relating to infection in the domestic, social, and industrial relations, in connection with the nursing of infants, the performance of surgical operations in obstetric practice, the operation of vaccination, and dental surgery. The modes of infection and the vehicles of infection are fully given and the enumeration of them certainly presents a dreadful showing. On reading the cases over one instinctively thinks that it is little less than miraculous that there are not more cases of unmerited syphilis than really occur.

Much useful information is brought together in chapter vi, in which the essential facts relating to the various epidemics of syphilis during the past three hundred years are given. In these outbreaks thousands of innocent victims have become infected in the performance of such simple operations and functions as cupping, phlebotomy, breast-drawing, accouchement, circumcision, lactation, and vaccination.

Dr. Bulkley quite clearly shows that the diseases known as sibbens, radesyge, boutons d'Amboine, mal de Chicot, marsksygdom, scherljevo, mal Kabyle, yaws, and others were in all probability outbreaks of syphilis in epidemic or endemic form. In like manner the facts relating to the sporadic occurrence of syphilis in families are well brought out in a very instructive chapter.

In the matter of the prevention of syphilis, and particularly in protecting the innocent, the author, like most writers upon the subject, is sentimental rather than practical in his views as to repression. He favors the legal control of the disease, placing it on a par with the usually recognized contagious diseases, and making it criminal to transmit it wittingly.

Confronted with the impossible task of stating how to control the spread of syphilis, Dr. Bulkley, with laudable purpose and in a chivalrous spirit, says: "Instead of examining the women publicly, those connected with the nefarious business would see that they were already in a healthy condition. They would then *examine the men* [sic]. This again would operate advantageously. For many would hesitate to go to the houses of ill-fame if they knew that they were to be thus examined, and those that were syphilitic would exclude themselves." One naturally feels sorry for an author placed in the position that Dr. Bulkley has been by reason of his elaborate portrayal of this widely spread, malignant, and insidious disease and its awful consequences, particularly in persons innocent of any wrongdoing. The recital of necessity demands directions and opinions as to prevention and repression, and we goodnaturedly read the Utopian suggestions and say to ourselves that the author must have heaved a deep sigh of relief when he came to the end of that chapter.

In conclusion, we may say that the work gives evidence of vast research and diligent labor and is certainly a reliable cyclopædia of extragenital syphilis up to the year 1893.

A Text-book of Practical Therapeutics, with Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By HOBART AMORY HARE, M. D., B. Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Fifth Edition, enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co., 1895. Pp. 740.

THE term practical eminently suits Dr. Hare's text-book, for more than most works on materia medica the volume is adapted to the needs of those whose work is what is known as private practice and whose requirements are less of theory than of fact. Not that theory is wanting in the volume; on the contrary, the reconciliation of theory with fact is one of its admirable qualities. Another admirable quality of the work is an attempt at originality and the record of personal experiment and observation. It is a stupendous task to attempt originality in a therapeutic work, save paroxysmally, and most writers on the subject are content to make of their works mere transcripts. The work of Hare departs from this type and is marked by many an originality of observation. Not that it is revolutionary; in view of the therapeutic experiments of ages, that would be absurd, and indeed the larger part of it is the record of generally accepted facts and of the opinions of older teachers, but the author takes the liberty of having opinions of his own, of attempting their proof by experiment, and, when they are proved, of recording them. This is as it should be. The author, far from sleeping upon the success of his earlier editions, has ably taken advantage of his opportunity to make his work progressive, and hence the more brilliantly successful.

In this last edition the antitoxine treatment of diphtheria is "discussed," but the discussion is a woeful disappointment and not up to the standard of the rest of the work, for it is principally theory, little of fact, and is meagre and unsatisfying to the last degree. "Practical" could not be applied to this portion by the widest stretch of the imagination. We would also suggest to the author that in the preparation of the sixth edition the *British Pharmacopœia* be more carefully consulted in the revision of the volume's pharmacology. This will result in the correction of several mistakes which, though slight, had better be corrected.

The Pocket Materia Medica and Therapeutics. A Résumé of the Action and Doses of All Official and Non-officinal Drugs now in Common Use. By C. HENRI LEONARD, A. M., M. D., Professor of the Medical and Surgical Diseases of Women and Clinical Gynæcology, Detroit College of Medicine, etc. Second Edition, revised and enlarged. Detroit: The Illustrated Medical Journal Co., 1895. Pp. 387.

WITH books like this the idea of inclusiveness is often conveyed by the phrase *multum in parvo*, but in the present instance *multum* is altogether unequal to the occasion and is inadequate to describe the plethora of this little volume. No doubt it is difficult in writing such a work to decide what shall be retained and what rejected, for the useless may be included for the sake of completeness. The author has chosen to be inclusive, and as a result the work contains, aside from the drugs of known and recognized value, about as miscellaneous a collection of medicinal pretenders as it would be possible to imagine. This is unfortunate, for the design of the work was well conceived, and could the selection of the remedies to be considered have been judicious rather than generous the result would have been far better. As it is, if one wants to carry about in his pocket brief clinical, botanical, physiological, pharmaceutical, and therapeutical data concerning about every drug of which he has ever heard and more of which he has not, this is the very book he wants. It is with regret that we comment thus, for a vast amount of good and able work is here represented which might otherwise have been expended to great advantage. It is a pity, too, that the latest pharmacopœia should not have been more closely followed. Finally, we can not refrain from pointing out the etymological mistake the title contains, a mistake which unfortunately is too often committed, of employing the word "officinal" to convey the meaning which *official* only can express.

Dental Materia Medica and Therapeutics. By JAMES STOCKEN, L. D. S. Eng., Pereira Prizeman for Materia Medica, Late Dental Surgeon to the National Dental Hospital. Fourth Edition. Revised by LESLIE M. STOCKEN, L. R. C. P., M. R. C. S., L. D. S., and J. O. BUTCHER, L. D. S. Eng., Assistant Dental Surgeon to Guy's Hospital. London: H. K. Lewis, 1895. Pp. 155.

ALTHOUGH this little volume is designed and suited for the use of the dental profession alone and therefore is the less of interest to the larger number of our readers, we may be forgiven, because of its excellence, if it calls from us more than a nod of recognition. The volume we now speak of is, it is true, a fourth edition, but it bears but slight resemblance to the work as it first appeared, so changed is it and so improved. The first portion deals with materia medica, pharmacy, pharmacology, and therapeutics, not in any restricted or dental sense, but broadly and inclusively. The presentation of these subjects is so orderly, so well classified, and so forcible that it well-nigh serves as an example to more elaborate works. The drugs which compose the dental materia medica come next and are briefly yet strongly considered; indeed, brevity and strength of composition are the book's prominent features, serving as they do to give, with an excellent paragraphing and classifying, the very meat of the matter in few words. A therapeutic index follows, and then come a chapter on artificial respiration, brief chapters on definitions, abbreviations, and prescribing, and a general index. To the dental practitioner the book must surely be most serviceable.

A Text-book of Practical Medicine. Designed for the Use of Students and Practitioners of Medicine. By ALFRED L. LOOMIS, M. D., LL. D., Professor of Pathology and Practical Medicine in the Medical Department of the University of the City of New York; Visiting Physician to Bellevue Hospital, etc. Revised and enlarged. With Two Hundred and Seven Illustrations. Eleventh Edition. New York: William Wood & Co., 1895. Pp. xvi–1134.

WHEN a medical work has reached its eleventh edition it would seem that criticism is scarce appropriate, and that editorial comment must almost perforce be laudatory. This may be accepted, however, rather as a general rule than as an absolute one, for success does not invariably follow worth, and merit is not necessarily the precedent of success. Merit is the precedent, however, in the case of the *Practice* of the late Dr. Loomis, and success is its natural reward. The importance, the scope, and the excellence of the work are too well known to require more from us than the assurance that the last edition is the modernized equal of its predecessors, and were we disposed to praise it is difficult to see how we could say more. In one thing we are disappointed, and that is the matter relative to the antitoxine treatment of diphtheria. It is conservative, no doubt, to present the views of the adherents of this procedure and then in sharp contrast to give the views of its opponents, leaving the reader to reach his own conclusions on the matter, but it is certainly not satisfying; and to the student if not to the practitioner it would have been serviceable, we think, had something more decided been given than detailed statements and equally specific denials.

BOOKS, ETC., RECEIVED.

The Diseases of Children's Teeth; their Prevention and Treatment. A Manual for Medical Practitioners and Students. By R. Denison Pedley, M. R. C. S., L. D. S. Eng., F. R. C. S. Edin., Dental Surgeon to the Evelina Hospital for Sick Children, Southwark, London. With Numerous Illustrations. London: J. P. Segg & Co. Philadelphia: S. S. White Dental Manufacturing Co., 1895. Pp. xi–268.

Laboratory Manual of Inorganic Preparations. By H. T. Vulté, Ph. D., F. C. S., Professor of Chemistry in Barnard College, etc., and George M. S. Neustadt. New York: George Gottsberger Peck, 1895. Pp. ii–180.

The Comedy of Sentiment. A Novel. By Dr. Max Nordau. New York: F. Tennyson Nealy, 1895. Pp. 7 to 278.

State of New York: State Commissioner in Lunacy. Sixth Annual Report. October 1, 1893, to September 30, 1894.

Tumor and Large Cyst of the Cerebellum, with Symptoms extending over Several Years. By J. T. Eskridge, M. D., of Denver, Col. [Reprinted from the *Medical Record.*]

State Provision for Epileptics. By William Francis Drewry, M. D., of Petersburg, Va. [Reprinted from the *Transactions of the Medical Society of Virginia.*]

Pancreatic Cysts. By P. C. Remondino, M. D. [Reprinted from the *Los Angeles Polyclinic.*]

Some Vestigial Structures in Man. By W. E. Rotzell, M. D., of Narberth, Pa. [Reprinted from the *Hahnemannian Monthly.*]

The Conditions of Radical Cure in Cancer. Tumors of the Breast which are Dispersible without Operation. The Conversion of Benign Tumors into Cancer. The Practical Outcome of Recent Researches on Cancer. Reprinted Papers. By Herbert Snow, M. D., London, etc.

Is Hydrochloric Acid Secreted by the Mucous Membrane of the Stomach? By J. A. Wesener, Ph. C., M. D. [Reprinted from *Medicine.*]

The Evolution of Relic Worship. A Page from the History of Medicine. By P. C. Remondino, M. D. [Reprinted from the *Medical Age.*]

Ueber das Resorptionsvermögen der Harnblase. Von Dr. H. Alapy, Operateur in Budapest. [Sonderabdruck aus *Centralblatt für die Krankheiten der Harn- und Sexualorgane.*]

The Medical News Visiting List. 1896. Thirty Patients a Week. Philadelphia: Lea Brothers & Co., 1895.

Miscellany.

The Local Application of Cold in Acute Pneumonia.—At a recent meeting of the Philadelphia County Medical Society Dr. Thomas J. Mays read a paper on this subject, of which the following is the substance: Whatever opinion we might hold, he said, in regard to the value of any treatment, it was quite obvious that in the long run the verdict would favor that one which showed the smallest mortality rate. He was well aware, he said, that statistics were often unreliable unless they rolled up into large figures, yet he believed that the ninety-three cases of which a detailed account was given by the author would form a basis on which to rest an opinion of the treatment advocated; but before drawing any positive conclusions he mentioned briefly the results which had been obtained by various other forms of treatment of pneumonia. Dr. Osler had reported that out of 1,012 patients treated in the Montreal General Hospital twenty per cent. had died, and that in the Charity Hospital of New Orleans the mortality rate had been 20·01 per cent.; of 1,000 patients treated in the Massachusetts General Hospital from 1822 to 1889, the death-rate had been twenty-five per cent. Dr. Hartshorne had stated that the mortality rate from this disease in the Pennsylvania Hospital during the years 1884, 1885, and 1886 had been a little more than thirty-one per cent. Louis had treated 107 patients, of which 32, or about thirty per cent., had died. Grisolle had had a mortality of sixteen per cent. in 232 uncomplicated cases. Rasori had treated 648 patients with large doses of tartrate of antimony, and about twenty-two per cent. had died. With the same medicine, Grisolle had lost 18·8 per cent. of 154 patients, and Dietl 20·7 per cent. of 106 patients. During a period of sixteen years previous to 1861 Dr. Hass, of Stockholm, had treated 2,616 patients, with a death-rate of 10·74 per cent. Of 129 patients treated on the restorative plan by Dr. Bennett, of Edinburgh, only 4 had died, giving a mortality of 3·1 per cent. Dr. Hegelé, head physician of the Würzburg Hospital, during 1848 and 1849 had treated 40 patients with cold water, without a single death.

What conclusions, said Dr. Mays, were we to draw from a death-rate which varied all the way from thirty per cent. to nothing? Were we to believe that all pneumonics recovered under certain methods of treatment, and that a large proportion of them would necessarily die under others?

When we came to compare the results of the ice treatment of pneumonia with those which had been obtained from other forms of treatment, it was safe to say that the former were infinitely more satisfactory than the latter. Although Dr. Bennett's figures excelled those which were presented in the author's collection by about a half of one per cent., it must not be forgotten, he said, that Dr. Bennett's results were entirely overshadowed by Dr. Hegelé's forty cases, in which hydropathic treatment had been employed, and no deaths had occurred. Moreover, it must not be overlooked that, so far as his knowledge extended, Dr. Bennett's observations had not been duplicated by any one on the lines laid down by him; while, on the other hand, this was not the case with the cold treatment; its results in his collection had not been secured by a single individual only, but by as many as thirty-four different observers, among whom were a number who had seen a score of cases, and many more a lesser number in succession, without a single death. This of itself spoke volumes in favor of the method advocated, for it showed that the personal equation of the practitioner could not enter very largely into the success of the treatment.

In regard to the tendency to death in pneumonia, said Dr. Mays, high fever, high pulse-rate, frequent and difficult respiration, extensive exudation, etc., were universally regarded as critical and serious symptoms and conditions of this disease. On deeper examination, he believed, however, that these were mere superficial manifestations of grave disorder of the nervous system below, and that the gravity and intensity of each attack were always related to the degree of resistance which was offered by the nervous system against the ingress of the disease. This, he said, was corroborated by the common observation that pneumonia was ushered in by intense nervousness, violent headache, active delirium, local muscular spasm, and general convulsions. Lemaire had reported a case (*Centralbl. f. Nervenheilkunde*, 1888, vol. ii, p. 680) in which two attacks of pneumonia had been preceded each time in the same individual, the first at the age of thirty-two and the second at forty, by genuine epileptic seizures, and this in a person who had not been subject before or afterward to epilepsy. The close affinity between pneumonia and diseases of the nervous system was also shown in the almost constant association of the former affection with cerebro-spinal meningitis and with other acute diseases of the brain and the upper portion of the spinal cord. That disorder of the nervous system was capable of originating pneumonia was by no means a new doctrine. A few years ago, he said, Dr. Hughlings Jackson, discussing a paper entitled Pulmonary Paresis, read by Dr. B. W. Richardson before the London Medical Society, had said that he regarded acute pneumonia as a form of herpes zoster of the pneumogastric nerves (*Proceedings of the London Medical Society*, vol. xi, p. 95). Dr. Fernet, in a paper on Neuritis of the Pneumogastric Nerves as a Cause of Acute Pneumonia (*Praktische Heilkunde*, 1879, i, p. 18), had expressed the conviction that the so-called fibrinous pneumonia was a herpes of the lungs brought about by disease of the pneumogastric nerves. Professor Baelz, in the course of his lectures in the Tokio University of Japan, taught that pneumonia was a reflex vasomotor exudation neurosis (*Centralbl. f. klin. Med.*, 1888, p. 883. It was thus seen that this line of thought had occupied some of the foremost men in the medical profession.

From this, said the author, we learned that one of the most threatening dangers in pneumonia came from a defective supply of nerve force to the lungs. This was indicated not so much by great frequency of breathing as it was by frequent and laborious respiration. The patient who lay moaning with and struggling for each breath, who complained of pain and distress in the gastric region—the evidence of an overworked diaphragm—must always be regarded with the gravest concern. Here the tendency to death was by pulmonary exhaustion—a condition sometimes found without very marked extension of the exudation process or much fever, and most frequently in the aged or in those whose nervous systems were overworked or exhausted by alcoholic excess, etc. Equal to the danger of this condition was that of the extension of the disease in the lungs. When this covered a large area, as in double pneumonia, there was marked interference with the function of breathing, and the patient was likely to die for the want of sufficient aerating surface.

The next in importance were hyperpyrexia and a weak heart. It was not necessary to say anything about the detrimental effects of high fever in pneumonia. It was also well recognized that, in virtue of its close affiliation with the lungs, a weak and disordered heart was a constant accompaniment of pneumonia.

The therapeutic indications in the management of pneumonia, he said, were, therefore, as follows: 1. Suppression and limitation of the process of exudation. 2. Support of the nervous system and particularly of the pulmonary nerve supply. 3. Reduction of fever. 4. Maintenance of the function of the heart.

What part did cold play in filling these indications? It could not fill them all, but it covered those of greatest importance. First of all, it reduced the pyrexia, strengthened the pulse, toned up the heart, diminished the pain in the chest, alleviated difficulty of breathing, and gave greater general comfort to the patient. It was capable, however, of doing a great deal more. By virtue of its power to stimulate nerve function and to contract small blood-vessels it promoted the pulmonary circulation, relieved stasis, hastened resolution, and dispersed the products of exudation. Strychnine in large doses to sustain respiratory and cardiac innervation; concentrated food of the most nourishing character, like fresh beef juice, milk, brandy, etc., to support the constitution; digitalis to maintain the heart; oxygen by inhalation to relieve the breathing; morphine to produce sleep; an ice cap to the head to diminish restlessness; and strapping of the chest in case of great pleuritic pain, were some of the agents which would fill most of the remaining indications.

On Sending Phthisical Patients Abroad.—The *Lancet* for November 2d publishes an article on this subject by Dr. Samuel West, of London, in which he says that climate is not a cure for phthisis, but it may help a phthisical patient to get well. There is probably no place on earth where phthisis can not exist, and though where the air is pure and the conditions of life are sanitary there will be little phthisis or none at all, still, even there, if the conditions of life are altered and if they become less sanitary or even unwholesome, phthisis will develop or increase. Thus it is that there is more phthisis in towns than in the country, and in the crowded parts of a town than in the less crowded parts. Even in Australia, which was once thought to be free from phthisis, it is now becoming the same scourge it is elsewhere, and especially in the large towns. Sunlight and fresh air are potent remedies for phthisis, and those places are best for phthisical patients where they can be longest out of doors in bright sunshine and in pure air. A good climate is a place to get well in or to convalesce in, and in order that a phthisical patient should derive full benefit from such a climate he must be more or less convalescent—*i. e.*, getting better, or at any rate not getting worse; in other words, the phthisis must not be in the acute or active stage. Even in the best of climates the patients must still be treated as invalids or convalescents, and must be taken the ordinary care of, such as prudence and common sense would suggest. No climate is perfect, none will do away with the need of care; yet how many patients suffer by not knowing or disregarding this—by acting as if the climate would do the impossible, running risks and doing things which at home none but the healthy and strong would do, and such as an invalid should never attempt!

The question of going abroad is a very serious one, says the author. It involves the abandonment of the ordinary occupations and perhaps the loss even of the means of livelihood, the breaking up of the home and family it may be, and the expenditure of much money. This, therefore, is a question not to be lightly decided. It requires the greatest deliberation, and into it enter many considerations besides those which are purely medical. It is often a question of not what is best in the abstract, but what is the best possible under the circumstances in which the patient is placed. In every case the question must be answered with special reference to the individual concerned, and can not be settled on general principles, for, however true such principles may be in general, they often lead to the gravest error in practice if applied indiscriminately and without special consideration to an individual case. Patients often go to a medical man expecting him to decide offhand. This is sometimes attempted, and not infrequently with lamentable results.

If the patient is to be benefited, says the author, by a good climate, his condition must be such that he may be able to take full advantage of it when he gets there. A patient who is in the acute stages of the disease, who is too ill to be up, is obviously not fit to be sent away. He should remain at home where he can be carefully nursed and tended. Even if he is not so sick, although with a temperature above normal every day and with marked constitutional signs, he should stay at home. In these respects the constitutional condition rather than the physical signs is the best guide for the physician. If, on the other hand, says Dr. West, the temperature is not much raised, and the strength fair, so that the patient may be out a good deal when the weather permits, he may be sent abroad. The most suitable cases are those in which constitutional symptoms are entirely absent and the disease is stationary, and this is true in any stage of the disease, whatever the physical signs may be.

It is useless, he says, to send phthisical patients away for only a month or two. They should leave in October and not return until May or June. Of course, they need not stay in the same place all the time. They may, for instance, spend the autumn in Geneva or at the Italian lakes, and make their way to the Riviera as winter sets in, going up perhaps to the mountains as the heat of spring and summer comes on. At any rate, the whole winter must be spent away, and if the first proves a success, possibly a second and a third. All this means money, and on this score the mind must be easy if the climate is to do good.

Few persons like to be sent abroad for their health. Some may enjoy it if they are well enough; but these are generally young people with no special responsibilities or cares, to whom the novelty and change of life are full of interest. Most other persons look upon it as exile, and to those of a despondent nature homesickness and the petty discomforts and trials of foreign residence often make the life intolerable. Again, he says, some occupation must be provided if the invalid is not to suffer from *ennui*, for time often hangs heavy on a sick man's hands. Open-air exercise and occupation are the best of all if the invalid is well enough to enjoy them; but, if he is not, it may often be difficult to keep him occupied and happy. It will also be necessary to consider what the effect of leaving home, family, and friends will be upon the invalid. Many patients feel and say that they would rather live a shorter time at home, with their family and friends about them, than a longer time abroad, separated from all that makes their life worth living. To banish a phthisical mother from her family and home is often cruel, and almost as often ineffectual, for the craving for home and the grief of separation produce more harm than the climate does good. Due allowance must be made for this personal question. A compromise may sometimes be made with advantage by choosing a place, not too far away, where the mother, for instance, may feel that if necessary her children could always come to her, or if need be she could go to them. The idea of absolute separation is sometimes unbearable, and the fear which some patients have lest they should die abroad not infrequently decides them against a foreign journey.

We have next to consider, says Dr. West, what place will best fulfill the requirements, bearing in mind especially the kind of life the patient is likely to lead, whether he will be much out of doors and lead a more or less active life, or whether he is incapable of much exertion and must lead a more or less sedentary life when out of doors. In the latter case the place must be warm, but in the former it may be colder and more bracing. The idiosyncrasies of the individual, again, must not be forgotten. It will be well to ascertain what kind of place has hitherto suited him best, whether a high or low place, a hot or cold place, a bracing or a moist and more relaxing air. Speaking generally, phthisical patients are best in a warm but not hot place, fairly high up, and with a more or less bracing air; at any rate, great heat and great moisture do not suit most of them.

If it is settled that the patient shall go abroad, he must leave the country before the bad weather sets in—that is, before November—and must time his journey so that he reaches his destination at the right season and is not exposed on the way to great extremes of temperature; for instance, if he were going to Australia in October he would not go through the Suez Canal and Red Sea, but would take the voyage round by the Cape, or if going to Davos he would arrange to get there before the winter had set in.

The places recommended as winter resorts for phthisis, continues Dr. West, differ so much from one another in climate that it is difficult to see what they have in common, yet good results are obtained in suitable cases with all alike. Statistical statements are most unreliable—first, because of the smallness of the numbers dealt with, and, secondly, because there is no guarantee that the cases in each group are really those of patients in the same stage or condition of the disease, so as to admit of fair comparison *inter se*. The only requisite which it appears every suitable climate possesses is that of admitting of the patient's being as much in the open air and sunlight as possible. Wherever they can spend all day out of doors, he says, and when indoors can still live in a pure atmosphere, phthisical patients will do well; and he has little doubt that, with the same precautions and subject to the same *régime* that phthisical patients voluntarily submit to abroad, they might easily live and benefit in many places at home in spite of the cold winds, moist air, and comparative want of sun in winter.

The author concludes that in this question of wintering abroad we have to decide not what is best in the abstract for phthisical patients in general, but what is the best possible under the circumstances for a particular patient. What these circumstances are will take time and trouble to investigate, but they are the prime factors in the problem. To come to the right conclusion in any given case requires some knowledge and experience, much care and trouble, and, most of all, sympathy and common sense.

The Diagnostic Value of Fluid Discharges from the Ear in Head Injuries.—In the November number of the *Edinburgh Medical Journal* there is an article on this subject by Dr. Alexander Miles, of Edinburgh, of which the following is the substance:

The diagnosis of fracture of the middle fossa of the base of the skull is usually considered, he says, as beyond doubt when there is present, among other signs, a copious and long-continued bleeding from the ear, accompanied or followed by the escape of a greater or smaller quantity of cerebro-spinal fluid.

In considering the diagnostic value of these signs—bleeding and welling of a clear fluid from the ear—we are, of course, not concerned with those cases in which the discharges, while escaping from the external meatus, have their origin in a fracture of that canal, or in a rupture of the tympanic membrane; but only with those in which the source is undoubtedly intracranial.

That there is a fracture of the base of the skull in a majority of the cases in which these signs appear, says the author, our post-mortem records amply bear out, and must at once be admitted. None the less there are a number of well-authenticated instances on record in which, even with these phenomena prominent, no such lesion was to be detected after the most careful examination.

It must not be forgotten that many cases of fracture involving the temporal bone occur without the escape of either blood or cerebro-spinal fluid from the ear, even in the presence of a ruptured tympanic membrane. Le Gros Clark, referring to this subject, says that he considers the oozing of blood and cerebro-spinal fluid from the ear as a diagnostic point in fracture of the base of doubtful value.

It would therefore seem an open question whether the usually accepted explanation of the association of basal fracture with the escape of blood and cerebro-spinal fluid from the ear is the correct one.

With regard to the prognosis, says Dr. Miles, the older surgeons were inclined to look upon the signs under consideration as tending materially to increase the gravity of the prognosis in cases of basal fracture. This opinion, he says, was doubtless founded on the effects of septic infection, which even now accounts for not a few of the fatal results. More modern writers take a less sinister view. Sir Prescott Hewett reports eleven cases accompanied by welling, in eight of which recovery was obtained, and in the remaining three the brain lesions were so severe as to have opened into the lateral ventricles. Battle, referring to basal fracture, says that most of the patients recovered in whom the fracture was supposed to be in the middle fossa, and the diagnosis of the position of the fracture was largely based on the occurrence of hæmorrhage from the ear. He quotes eight cases of fracture of the middle fossa not implicating the auditory apparatus, and unaccompanied by bleeding or welling from the ears, all of which were fatal. One of his cases, says Dr. Miles, is of special interest—one in which a considerable bleeding from the ear was explained by a fracture of the wall of the external meatus, while the tympanic membrane remained intact. At the post-mortem examination a large clot was found on the brain.

An analysis of his own cases, he says, seems to bear out the view that the escape of blood and cerebro-spinal fluid improves the prognosis. Out of five experimental cases, death occurred in four, and in none of these was there bleeding or welling from the ears, although in all there was hæmorrhage into either the auditory-nerve sheath or the internal or middle ear. Of sixteen cases, six presented signs of blood or welling, or both, and of these five resulted in recovery. In the ten others these signs were absent; six patients died, two recovered imperfectly, and two recovered very slowly.

These observations, says the author, lead to the following conclusions:

1. That while in the majority of cases in which bleeding and welling of cerebro-spinal fluid from the ear are present a fracture of the middle fossa of the skull exists, these signs are not pathognomonic.

2. That the fracture is in many, perhaps in most, cases simply a coincidence.

3. That the great bulk of the hæmorrhage comes from the vessels of the arachno-pial membrane, and of the temporo-sphenoidal lobe of the brain, and not from the fractured bone.

4. That the path of the discharges is along the sheath of the auditory nerve, through the lamina cribrosa to the vestibule, thence through the middle ear and ruptured membrane to the external meatus.

5. That, excluding the extra risk of sepsis, the prognosis is, on the whole, better when these signs exist than when they do not.

Tincture of Cantharides and Albuminuria.—In an article on this subject, published in the *Gazette hebdomadaire de médecine et de chirurgie* for October 26th, M. Du Cazal remarks that at a recent meeting of the *Académie de médecine* M. Lancereaux stated, in a communication on albuminuria from a therapeutic point of view, that when uræmia had ceased we must seek to modify the altered tissues, and that the medication necessarily varied according to whether it was the connective and vascular tissues or the epithelial tissues which were involved; for, if in the first case potassium iodide was to be preferred, in the second case cantharides had given him the best results. In two cases the patients, who had suffered from epithelial nephritis with albuminuria and considerable anasarca, had been cured in less than three months under the influence of this drug. In another case, in which there had been considerable anasarca, the patient had passed only fifteen ounces and a half of urine in twenty-four hours. Twelve drops of the tincture of cantharides had been administered, and two days afterward the quantity of urine had been abundant, and at the end of eight days the anasarca had disappeared.

The question under discussion, says the author, is certainly one of great importance. Acute catarrhal nephritis is always a dangerous affection, often resulting in death from the uræmic and congestive symptoms that it causes, in the presence of which the physician is too often powerless.

The author states that since M. Lancereaux's communication he has had occasion to apply the treatment in a certain number of cases of nephritis, and has obtained the following results: In four cases out of five the treatment resulted in complete recovery, which was obtained in a surprisingly rapid manner; in the fifth case a considerable amelioration only was obtained. M. Du Cazal gives a detailed account of these cases, three of which were acute nephritis, in one instance consecutive to pneumonia, when the treatment had consisted in the employment of cold water. The others were cases of nephritis of scarlatinous origin.

It was the first time, he says, that he had employed this treatment, and it was with little confidence in its efficacy that he had done so, therefore he had been greatly surprised at the rapidity of the recovery and the persistency with which it had been maintained. In the third case, which had been one of acute catarrhal nephritis of grippal origin, the administration of the drug had brought about rapid diminution and then a complete disappearance of albumin, although in this case the nephritis had had a manifest tendency to become chronic. Notwithstanding the failure to obtain recovery in the fifth case, says M. Du Cazal, the results ascertained in the others absolutely confirm the account of those communicated by M. Lancereaux to the *Académie.* M. Laboullène and M. Olivier recalled the fact that the treatment by tincture of cantharides had been recommended by Grisolle and by Rayer, but that it had been forgotten until M. Lancereaux had drawn the attention of the profession to it, thereby, in the author's opinion, rendering a great service to physicians and, above all, to patients.

Church Catarrh.—The *British Medical Journal* for November 2d says that to those who are not in perfect health few things are more calculated to give rise to any malady to which they may have a tendency than sitting in a chilly church after the sharp walk which the ineradicable tendency to starting late seems to impose on all churchgoers. Perhaps the worst error in warming churches is committed by those who put off the beginning of the process until Saturday night, or may be Sunday morning, and then fire up hard to get things ready for eleven o'clock. The windows are kept closed for fear of losing heat; the stagnant air, with which those who visit churches on the week day are so familiar, is warmed up for Sunday use, but the walls remain cold, and when service begins, hot and even burned as the air may feel, there is no warmth in the building. Worshipers are thus subjected to the worst possible combination of surroundings—bad ventilation, foul atmosphere, draughts from internal currents, and the respiration of hot air while sitting in a building which is cold. The problem is not how to warm the air alone, but how to warm the church itself. This is necessarily a slow process, and it is doubly slow where, as is commonly the case, the attempt is made to use the same apparatus to warm the church that is employed for warming the incoming air. Unless, as in some cathedrals, stoves are placed actually within the church so that radiant heat is available, we doubt whether it is possible in cold weather to make a building fit for Sunday use without keeping up the fire all the week. This is not so much a matter of coals as of labor and supervision. A little fire all the week, with only just enough ventilation to keep the air sweet, will do far more to make the fabric warm than a great blaze for a few hours; and, after all, what is wanted much more is to warm the fabric so that every stick and stone shall radiate a sense of comfort. When churches are too hot from overfiring, people catch cold in consequence of the draughts which are produced and from the chill on coming out again. These are what one may call honest colds—stiff necks, neuralgias, lumbagoes, and sometimes "cold in the head"—things they might catch anywhere from sitting in a draught even of pure air. Unfortunately, too often the heat is the heat of closeness rather than of excess of fire, and then the results are much more deadly. Added to the evil of the draughts are the toxic effects of breathing again the breath of others, and absorbing the exhalations of fellow-worshipers. From such influences arise too often those depressing colds which, in fact, were till 1889 called influenza colds, with streaming eyes and nose, feverishness, and depression, drifting sometimes into an almost suppurative post-nasal catarrh, with great exhaustion.

The Simulation of Death by Indian Fakirs.—An interesting account of this subject was recently given by Dr. Kuhn to the Anthropological Society of Munich and reported in the *Journal de médecine de Paris*, an abstract of which is published in the *Province médicale* for October 26th. Dr. Kuhn, says the writer, had had occasion to observe two cases the genuineness of which he had no reason to doubt. One of the fakirs in question had been interred for six weeks and the other for ten days. The fakirs, who are hysterical to the highest degree, possess the faculty of producing artificially a condition identical with cataleptic ecstasy. They use all possible means, such as mortification of the body by a special diet, the internal employment of different plants known only to themselves, and the adoption of a peculiar posture of the body for many hours, etc. When they have practised this for a sufficient length of time, they assume one of the postures prescribed by the sacred books of the Indians and fall into a hypnotic condition induced by looking fixedly at the end of their nose. Hasheesh is still made use of by them to diminish the respiratory force, for this hypnotic, when associated with other plants and employed in a peculiar manner, makes up for the loss of air and nourishment.

The fakirs have hallucinations when hypnosis begins; they hear certain sounds, they see angels, and their faces express a feeling of happiness. But, little by little, consciousness disappears and the body acquires a peculiar rigidity. This is evidently, says the writer, a matter of self-hypnotism in hysterical persons who are sufficiently predisposed to it. This lethargy is looked upon by the people as death, and when the subjects are aroused it is God who has brought them to life.

In Greek or Roman literature, says the writer, we may find accounts of persons who have died and returned again to earth. There is nothing astonishing in these facts, for Bouchut, in his treatise on the signs which enable us to recognize real death, reported the case of a woman who had been disinterred in order that a friend might look at her again. She was found to be alive, and she lived for many years afterward. Also in the Department of the North there was a case reported of a girl who had remained in a lethargic condition for several years. She had fallen into this condition on hearing that she was to be arrested for having committed a crime.

The Number of Epileptics in the State of New York available for the Craig Colony.—Quite recently the State board of charities, through their representative, Dr. Charles S. Hoyt, canvassed the State to determine the number of epileptics in county and city almshouses available for transfer to the newly organized Craig Colony for Epileptics, in Livingston County. Dr. Hoyt reported four hundred and twenty-seven patients in these institutions. Feeling that this number by no means represented the actual number of epileptics available for admission to the colony, Dr. Frederick Peterson, president of the board of managers of the Craig Colony, has instituted a special separate inquiry among all sorts of public and charitable institutions—such as almshouses, hospitals, protectories, homes, orphan asylums, and the like—and the figures presented by him in this more extensive canvass are as follows:

Epileptics in county poorhouses	194
Epileptics in city almshouses	13
Epileptics in New York County almshouse, hospitals, homes, etc	246
Epileptics in Kings County almshouse, etc	39
Epileptics in various other public and charitable institutions in the State (exclusive of almshouses)	70
Total	562.

In addition to these 562 epileptics, a careful inquiry elicited the fact that there were nearly 1,000 epileptics in insane asylums throughout the State, of whom at the very lowest estimate fifteen per cent. were available for residence under the moderate restrictions of the Craig Colony, making an additional 150 patients. Moreover, nearly 100 letters of application have been received by officers of the colony from epileptics not in almshouses, asylums, or other institutions, but nevertheless poverty-stricken and eking out some sort of miserable existence on the charity of friends. The number, then, immediately available for the beneficent advantages of the Craig Colony may be recapitulated thus:

Epileptics available for Craig Colony in poorhouses, hospitals, and other public institutions in the State	562
Available from insane asylums (a moderate estimate)	150
Dependent epileptics, not in institutions, already applicants	100
Total	812.

It need hardly be said that these figures really fall short of the actual number of epileptics in the State of New York who should ultimately receive the benefits of the State's newest and greatest charity, for physicians familiar with the services in outdoor departments of hospitals and in the poor dispensaries of our cities know that very large numbers of epileptics come under their observation every year, epileptics without occupation, dependent upon charity and occasional temporary employment, or supported in idleness and misery by hard-working but equally poor relatives; and it is safe to say that the number of these deserving unfortunates in New York city alone must aggregate between three hundred and four hundred.

A Campaign of Education.—"Our associates of the United States," says the *Journal d'hygiène*, "have given this name, 'Campaign of Education,' to the work undertaken and carried to a successful issue by the Michigan State Board of Health, that of popularizing hygienic knowledge and inculcating sanitary precepts with a view to the extinction of zymotic, communicable diseases. The principal elements of action in this crusade are leaflets with diagrams and popular pamphlets. Given an infectious or contagious disease, such as scarlet fever, small-pox, tuberculosis, etc., the office of the State board of health proceeds to edit popular instructions, simple, clear, precise, and always in accordance with the most advanced medical knowledge of the day. These instructions contain the definition of the disease, its nature, its principal manifestations, and the means of preventing it and of restricting its spread. Under the care of the secretary of the board, Dr. Henry B. Baker, these instructions are published on leaflets and in pamphlets and are generously distributed to all classes of the population. This distribution is not, however, made haphazard as in the case of any industrial prospectus, but favorable opportunity is awaited, and when the existence of a communicable disease at any point calls for it the distribution is made.

"Let us take, for example, scarlet fever. As soon as a case of this disease is reported by the head of a family, by a householder, or by the attending physician the health officer of the district proceeds to the locality, and on the spot investigates the case, taking measures for the requisite isolation and disinfection of rooms, furniture, clothing, etc. At the same time, striking the iron when it is hot, special clerks make a liberal distribution of the documents of instructions to the inhabitants of the infected houses and their neighbors. The health officer and the clerks graciously hold themselves at the disposition of the public to furnish any further information which may be desired. Under these conditions the people become interested and intelligent co-operators with the sanitary authorities.

"The pamphlet of the State board of health on the restriction and prevention of scarlet fever has already reached its tenth edition, each edition being of several thousand copies. As to the results of this active and salutary propagandism, it suffices to consult the official statistics of the past twenty years, comparing the period of prophylactic measures with that anterior to the establishment of the State board of health. The tables of sickness and mortality from scarlet fever indicate, relative to both, an annual reduction of more than one half. Here is, truly, a method of procedure which enters into the system of instruction and education of the masses in sanitation which we have always extolled with the most entire conviction."

School Luncheons.—In an editorial on this subject published in the November number of the *Archives of Pædiatrics* the writer remarks that a prolific source of indigestion, irritability, and anæmia among children is to be found in the character of the luncheons they eat at school. In the country, where the distances are great, many children are obliged always to take their luncheons with them. This too often, he says, consists of cake, pastry, and preserves, to the exclusion of more digestible and nutritious food. It is, as a rule, eaten in haste, that time for play may not be encroached upon, and is washed down with large draughts of cold water. Such luncheons are not adapted to the needs of a growing child, and the haste with which they are eaten adds to their pernicious tendency.

In the city, although the conditions are quite different, the school luncheon also plays an important part in depleting the health of many children. Parents, says the writer, are frequently extremely unwise in allowing their children to remain at school during the luncheon hour when it is not necessary. They would be far better for the exercise of walking to and from school, as well as for a warm and properly prepared luncheon. Not infrequently the child is allowed to buy his luncheon at some neighboring bakery, and a neighboring bakery is a very common accompaniment of a large city school. The writer was recently passing one of these bakeries just at the luncheon hour, and, he goes on to say, it was thronged with school children, chiefly girls from ten to fourteen years of age. A small procession was passing back to the school, each girl with a paper sack in her hand. Being curious to see the character of the purchases, he entered and found without exception that the paper sacks were being filled with cakes or pastry, chocolate éclairs being apparently at a premium. The wares of the shop were prepared apparently for the special purpose of catering to the school trade, and consisted almost exclusively of cakes and small pies designed for luncheon purposes.

These girls were at that time preparing for examination and promotion. Some of them were undoubtedly a source of anxiety to fond parents because of listlessness, irritability, and growing anæmia. If the doctor was consulted he undoubtedly gave much good advice and prescribed tonics. Advice and tonics would prove, however, equally unavailing on such a diet. A growing and developing girl of fourteen, working hard for promotion, requires something more sustaining between breakfast and dinner than a brace of chocolate éclairs or a quarter of a pound of angel cake. The doctor summoned to give advice regarding such a girl who does not inquire minutely concerning her diet at the luncheon hour may fail, says the writer, to reach a very important factor in the ætiology of the case.

The New York Academy of Medicine.—At the last general meeting, on Thursday, the 21st inst., the order for the evening was to be an anniversary discourse entitled Progress in Medicine, by Dr. E. G. Janeway.

At the next meeting of the Section in Laryngology and Rhinology, on Wednesday evening, the 27th inst., a paper entitled Thyreotomy, with a Report of a Series of Cases Operated in during the Past Twenty Years, is to be read by Dr. Clinton Wagner. There will be a discussion upon The Surgical Treatment of Malignant Disease of the Larynx, by Dr. J. Solis-Cohen, Dr. H. L. Swain, and others. Patients will be presented, and there will be an exhibition of instruments and apparatus.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 28th inst., the following papers will be read: Lactation Atrophy of the Uterus, by Dr. H. N. Vineberg, and Venous Thrombosis as a Cause of Sudden Death in the Puerperium, by Dr. Elizabeth Cushier. Cases will be reported, and specimens and instruments exhibited.

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Original Communications.

SYPHILIS OF THE NOSE;

WITH REPORTS OF CASES.

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Primary syphilis of the nose occurs with great rarity. Dupont found chancre of the nose only once in seventeen hundred and seventy-three cases. It has not been my fortune to observe a single instance in three thousand cases of nasal disease. Maure, in 1888, published a case, and at the same time drew attention to the infrequency of primary infection at this point. Spencer Watson had, however, before Maure's publication, reported a case, the point of infection being the sæptum. O. Seifert has lately collected twenty seven cases of chancre on or in the nose. In the largest number of cases the alæ nasi were the points of infection; in a lesser number the chancre was within the nose, and here least frequently on the sæptum. The finger was, in the majority of cases, the carrier of the infection. Higguet saw two cases where a communistic snuffbox was the point of distribution. Kissing has been the means of infection in a case reported by Heissler. Picking the nose, and thus excoriating its coverings with the nail, after having washed utensils used by the syphilitic, has several times been the modus of primary infection.

The clinical appearance of a primary sclerosis attacking the interior of the nose usually varies according to the age of the patient. In young children the sore frequently appears and runs its course as a simple papule without induration (Massei). In the adult, too, it may in the beginning appear as a benign ulceration, but in this class it soon becomes indurated, and in both classes interference with respiration becomes a prominent symptom. In Rasori's case there was intense frontal headache. In Watson's case there was elevation of temperature and great swelling of the interior of the nose. Maure's case showed an unusual proneness to bleed. Otherwise chancre of the nose, as well as the subsequent course of the disease, does not differ from syphilis attacking other regions of the body. The indolent swelling of the submaxillary and sublingual and pre-auricular glands, when found, renders valuable aid in diagnosis.

Secondary syphilis manifests itself in the nose as (*a*) erythema, (*b*) condylomata, (*c*) secondary ulceration.

(*a*) Erythema consists of hyperæmia of the mucous membrane with swelling of the submucous connective tissue. It manifests itself in the earliest stage as a catarrh (coryza syphilitica simplex). Attacking adults, it is often overlooked. In infancy it is of the greatest importance.

In by far the greatest number of cases the objective and subjective signs differ only slightly from those observed in simple acute catarrh. The hyperæmia of one is difficult to distinguish from that of the other. But there is this difference in regard to syphilitic coryza: the onset is less violent, is more gradual, and the secretion, especially in the first stage, is not so profuse, but when established lasts longer than in the simple acute catarrh. Disseminate patches of well-defined erythema may be seen, especially on the sæptum, and on these may develop the plaques, which are the first pathognomonic signs of syphilis. While, as regards the nose, the diagnostic value of syphilitic erythema is not conclusive, the syphilitic erythema of the pharynx, with its depth of color, its sharp definition, and the strikingly healthy appearance of the surrounding mucosa, is sufficiently peculiar to warrant us in regarding it as characteristic.

In early infancy the nasal manifestations are among the surest secondary signs of hereditary syphilis—*i. e.*, at the time of or shortly after birth. Later they become less characteristic. Coryza syphilitica in the nursing infant becomes a menace to its life—first, because it occurs in an infant that is already badly nourished and the stoppage of the nose prevents its feeding; and, secondly, because all those factors which make a simple coryza in a nursing infant a dangerous disease are greatly augmented in the syphilitic variety. Every slight swelling of the structures in the nose will soon put an end to nasal respiration in an infant. This is due to the anatomical peculiarities of its skull. The face is much less developed than the brain. The ethmoidal cells do not yet exist. The sphenoidal cells and maxillary and frontal sinuses are only rudimentary; the hard and soft palates are more horizontal than in the adult; the meati are very narrow; the post-nasal space is small, partly because of the membrana prævertebralis and partly because of the vertical direction the pharynx takes. Then, too, the secretion of an infant's nose, from the same causes (respiratory stasis), becomes incrusted early. Hassing reported a case of this kind in which dyspnœa was so urgent that tracheotomy had to be performed. Schmiegelow, speaking of this case, attributed the dyspnœa to a spasm of the glottis produced by reflex irritation of the coryza syphilitica. An interesting case similar to this occurred in my own practice, except that the patient was an adult and did not come to tracheotomy.

(*b*) *Condylomata* appear in the nose much less frequently than in the mouth, the isthmus faucium, lips, cheeks, tongue, or tonsils. Indeed, according to many observers, it is only in exceptional cases that they are met with in the nose. Michaelson, whose classical work on the subject is well known, has seen them several times in the vestibulum nasi, but nowhere else in the nose. Seifert gives the same experience. I have personally seen six cases of superficial erosions in the vestibule which were doubtless condylomatous in origin, and in one case circumscribed plaques along the inferior turbinated body. Davasse found them within the nose only eight times in one hundred and eighty-six cases; Bassereau twice in the vestibule in one hundred and ten cases. They occur by far most frequently in this locality. The condyloma as seen on the pituitaria varies somewhat from those seen on other mucous surfaces. Here they are only slightly elevated, are less prominently marked, and resemble circumscribed thickenings of epithelium. I believe that we receive this peculiar impression more from the oblique direction in which our reflected light strikes the plaques within the nose than from any real difference in the plaques themselves. They have a strong tendency to ulcerate and secrete actively. When they are acted upon by chemical irritants (chromic acid, bronze, etc.) we may have extensive destruction of bony parts. Such cases are a mixed form of coryza syphilitica and coryza professionalis (Toplitz, Polyak). But usually when a condyloma ulcerates the ulcer is superficial, presenting a loss of only the layers of epithelium, of which the bases may be covered by exuberant granulations. In only rare cases do these ulcerations penetrate to greater depths. They are usually surrounded by a zone of deeply injected tissue.

Late Syphilis.—Syphilis in its late or granulomatous form, when invading the nose, assumes an extraordinary importance. When we see those cases of frightful and hopeless deformity, or read of such as have been reported by von Babart and others, the results of neglect or improper treatment, and realize that we possess the power of arresting the demoniacal ravages of this disease, we must appreciate the importance of early positive diagnosis.

The time of onset of late syphilis of the nose is, according to Michaelson's statistics, from one to three years after infection. In five of my cases in which the data upon this point was ascertained the time elapsing varied from one, four, thirteen, seventeen, and eighteen years after infection.

It may begin with the abrupt symptoms of sudden onset, or its commencement and course may be marked by the utmost subtlety. The following cases from my private practice illustrate both of these modes nicely:

E., recommended by Dr. S., October 5, 1893, aged thirty-five years, married, no children. Family history very good. Syphilis contracted thirteen years ago. Under treatment three or four months. Has taken iodide of potassium at intervals since. Attention directed to nose last spring. Severe cold, lasting two months, characterized by stoppage of nose, sneezing, no pain, some discharge, frontal headache. Patient believes he had fever for three or four months. Has been under treatment by advertising specialists for six months, treatment consisting of simple spraying of the nose at office of the specialist three times a week.

Examination.—Right side: Ulcer with everted edges, yellowish-white base, running from the vestibule along the sæptum for the distance of two centimetres. Turbinated bodies; thickening of the epithelial layers, which gives a grayish-pink color to the mucosa.

Left side: Ulcer extending over the greater part of mucous membrane covering triangular cartilage. Slough from anterior head of inferior turbinated body, 1·3 by 0·3 centimetres. This was partly detached, and I snared off the balance. The middle turbinated body was greatly disorganized, and dead bone could be detected by passing the probe through the various foci of granulation and necrotic tissue. During the course of treatment these dead spiculæ of bone were detached. At no time did they measure over a couple of millimetres in breadth or length. The sæptum healed under treatment, with only a very slight perforation at a point corresponding to the junction of the triangular cartilage, perpendicular plate, and vomer, and it seems to me that this is the point where perforation from the syphilitic process most frequently occurs.

Dr. X., referred by Dr. W., January 3, 1893, aged forty-two, single, physician. Family history good. Urine negative. Scarlet fever and measles. *Anamnesis:* Last November had severe pain in region of kidney; lasted four hours each day and returned every day at regular periods. This disappeared under medium doses of quinine in about a week. A month after was seized with severe pains in the supraclavicular regions on right side at two o'clock in the afternoon, which lasted until 4 P. M. This was repeated every day from Monday till Friday, accompanied by chills and fever. After Friday's attack he took sixty grains of quinine. This "dulled" the pain on the following day, but after sixty additional grains the pain disappeared altogether.

Comes to me complaining of offensive smell from the nose —"ozæna," as he said. Patient noticed bad smell in nose last February, accompanied by discharge. Nose was very much stopped up. No pain that he remembers. Once in a while a cheesy lump has come away since a month or six weeks ago. The stench is very offensive. Last month the patient caught cold by chilling the cutaneous surfaces, and was attacked with acute suppurative inflammation of the middle ear, with profuse discharge followed by mastoiditis. No special symptoms through all this referable to the nose. Patient has no distinct recollection of syphilitic infection. About seventeen years ago had a sore on the lip which lasted several weeks. That occurred before he entered upon his medical studies, so he is unable to say what the treatment was, and his memory concerning the whole affair is rather dim.

Examination.—Nose, left side: Mucous membrane generally red and dry; nothing positive. Right side, floor: Mucous membrane thickened. Turbinated bodies normal in size; collection of thickened mucus in the regions of the orifices of the anterior ethmoidal cells. On examination of sæptum, I could see, at a point situated three centimetres from the lip and a couple of millimetres from the floor, a small, grayish, dry mass, which I at first took to be a scab. Upon using the probe this crumbled; by pushing the probe farther on it passed to the other nostril; manipulation gave crepitation of dead bone. I first scraped away the disorganized matter with a sharp spoon. Some of this resembled cottage cheese, was of a dark slate-color, and very offensive. Besides this, I took away the base of the vomer, part of the groove in which it rests, and a portion of the upper tablet of the palatal plate of the superior maxilla, measuring in all 2·8 by 1·5 centimetres. Part of this was taken away per post-nares. Profuse bleeding followed. Odor from breath completely gone next day. On fifth day a piece of bone measuring about 0·9 centimetre taken away. Here the dead mass projected from seemingly healthy membrane, as far as could be determined from anterior rhinoscopy.

CASE III.—Dr. B., referred by Dr. S., January 3, 1894, physician, aged twenty-eight years, single. Syphilitic infection four years ago. Mother died of phthisis. Has had attacks of coryza for years. About six months ago the nose became more or less continually stopped up. The condition grew worse two months ago. There has been little or no odor. The discharge is purulent and profuse. Had no idea that he was suffering from anything but simple catarrh.

Examination.—Left side: Sæptum and anterior and middle turbinated bodies meet, so that view is excluded. Mucous membrane is grayish, thickened, and covered with a purulent coating.

Right side: Ulceration running along the floor of the nose. Ulcer has everted edges; base, grayish brown. Perforation in sæptum about the size of a dime, embracing triangular cartilage and a small strip of vomer.

Case IV.—H., recommended by Dr. F., November 10, 1893, aged thirty years, single, American. Family history good. Mother died of diabetes. No infectious diseases of childhood. First came to me in June with pain in the nose; stoppage. Discharge not marked; severe frontal headache. On examination, I found that the sæptum on the left side projected into the cavity of the nose, touching the anterior head of middle turbinated body. The mucous membrane covering it was smooth, but more red than that covering the rest of the nose. On the right side the mucous membrane was reddened, thickened, and there was a decided angular deflection of that plate of the sæptum, which caused nearly complete stoppage.

I was not altogether sure as to the nature of the appearance on the left side of the sæptum. There was no permanent depression in the structures of the outer wall corresponding to the projecting sæptum, a point that should always arouse suspicion, inasmuch as any long-standing deviation of the sæptum which is sufficient to produce pressure on the turbinated bodies will produce permanent depression at that point. I could elicit no history of syphilis, but I placed the patient as an experiment upon iodide of potassium. There was great amelioration of symptoms, the obstruction on the left side diminishing. He was treated for three weeks and then disappeared. The latter part of October the patient again presented himself to me in great distress. Odor of the nasal breath very disgusting; discharge of scabs now and then, and continuous sanious or purulent discharge. Patient much depressed mentally and talked of suicide.

Examination.—Perforation of the sæptum about the size of a pea, around which was a rim of dead bone about three millimetres in diameter. Mucous membrane red.

Bone removed together with portion of upper table of floor. Complete healing, with perforation, in two months. The natural deviation of sæptum on right side was greatly benefited by the perforation.

The second case is remarkable. The patient was seen by one of our most eminent specialists on the same day upon which I examined him. There is no doubt as to the great ability and experience of this gentleman, yet he erred in diagnosis. I mention this fact simply to accentuate the caution that we should exercise continually the greatest care in our examinations, and that the use of the probe should become a routine practice. This case and Case I occurred in physicians, men of intelligence, and neither dreamed of the nature of the disease. In one the odor was most disgustingly prominent, in the other it was nearly or altogether absent. They both illustrate the subtlety with which this disease in its late nasal manifestations may begin and run its course. Case IV illustrates the suddenness with which it may begin. The smooth, diffuse infiltration on the left plate of the sæptum resembled very closely a deviation. The difference in color of the mucous membrane covering the prominence from that covering the rest of the sæptum was not marked. I have reason to believe not only that these infiltrations have been mistaken for deviations, but that they have been actually sawed away, after which the most extensive destruction of the sæptum has taken place.

Pathology.—Whatever the extent of the lesion in this stage, be it infiltration or ulceration, it is always due to one factor—the granuloma. The infiltration may be circumscribed or diffuse, the borders of which are more or less sharply defined from the surrounding tissue. The color of the mucous membrane covering the infiltration may be more or less redder than that covering the unaffected parts of the nose. The tendency of such an infiltration is always to break down. In rare cases, however, this does not occur. In such cases the new cell elements are resorbed, and the mucous membrane, deformed by a true cirrhotic process, produces the appearances in those cases of atrophy so well described by John Nolen Mackenzie, or of shrinking of the wings of the nose without previous ulceration, as described by Lang. But the usual result is ulceration. This takes place from the surface inward, or *vice versa.* The ulcerative process is progressive, and invades the healthy tissue, the spreading ulceration being preceded always by the stage of infiltration. All who have had experience in this domain know the great variations in appearance which the late syphilitic ulcerations within the nose may assume. This is due both to the degree of virulence of the process itself and to the structure of the particular part of the nose in which it occurs. The ulcer is usually covered with a grayish-white, green, or dark-brown coating. When we remove this by wiping with the cotton pledget, or the application of peroxide of hydrogen, the base is found to be more or less granulated; the granulations are pale, glassy, and possessed of a low degree of vitality, which is due to an imperfect circulation. The borders of the ulcer are more or less red, more or less sharply cut, more or less elevated. The shape of the ulcer varies. The longitudinal form of the syphilitic ulcer of the sæptum has come to be regarded as characteristic, but in a number of my cases the resulting perforations have been quite round.

When the mucous membrane is in contact with cartilage or bone, as in the sæptum, the osseous or cartilaginous structures are most liable to become necrosed. The resulting sequestrum may be very small or so large as to render it impossible of removal through the natural passages. The sæptum is the part most frequently attacked in nasal syphilis, but all perforations of the sæptum are not syphilitic. The labors of Weichselbaum, Hijek, Rosebach, and others have proved this. The ulcera syphilitica sæpti narium perforativa is to be diagnosticated from the simple so-called idiopathic perforation, from that caused by periostitis or perichondritis following trauma, tuberculosis, diphtheria, and chemicals—*i. e.*, chromic acid, bronze, etc. My experience has caused me to accept the opinion of Schröter and O. Seifert as correct—that a syphilitic perforation confined strictly to the cartilaginous sæptum is extremely rare, though its occurrence is possible; but when the specific process attacks the bone the cartilaginous sæptum adjoining is also involved. I believe, further, that if the cartilaginous sæptum is attacked primarily by the syphilitic disease the bony sæptum adjoining will be found to be necrosed, perhaps without exception, whereas the so-called idiopathic perforation never attacks the bone. In syphilis, too, the edges of the perforation are thickened and covered with coarse, pale granulations which bleed easily and are covered with a grayish-white coating, while the edges of the simple perforation, even at the very moment when perforation has occurred, are thin and rounded. They are occasionally covered with granulations, but they are very small, fine, and comparatively healthy, and in the majority of cases here and there are more or less advanced in the course of transformation into scar tissue. It is needless to say that specific treatment has no effect upon the simple perforation.

The collateral œdema accompanying late syphilitic disease of the nose varies in different cases and in the different stages. Usually in the beginning of the infiltration the œdema is great. In cases where a non-progressive ulceration has existed for some time it may be very slight or absent.

The osteoperiostitis syphilitica simplex or neoplastica can attack any of the bones which go to form the nasal skeleton (Massei). The infiltration may result in (1) exfoliation, (2) rarefying osteitis, or (3) plastic osteitis. In the exfoliative form the infiltration separates the periosteum (or perichondrium) from the bone (or cartilage); this in turn breaks down, and the pus so formed gains exit through the mucous membrane. It may be readily appreciated from this that we can not tell by the size of the external loss of substance in the mucosa to how large an extent the bone may be necrosed. In the rarefying osteitis the specific granulations cause the bone to be resorbed. In the plastic variety the granuloma tissue may be transformed into spindle cells, which in their turn are again converted into connective tissue. Thus, according to the observations of Scheck, Sanger, and Schuster, the entire sæptum may be absorbed without the discharge of a sequestrum. I have seen a case of this kind in which a large part of the bony sæptum was transformed into an apparently membranous partition; in running a cotton pledget along one side of the sæptum its course could be followed by a corresponding prominence on the other. A pinhead perforation resulted, but at no time was a sequestrum thrown off.

Fournier, in his lectures on naso-cranial syphilitic osteitis, has called attention to the manner in which nasal syphilis may be fatal. In such cases the ethmoid or the sphenoid are usually invaded. Secondarily the results may be (1) meningitis in its various forms, (2) thrombosis of the sinuses, especially the sinus cavernosus, which lies close to the sella turcica, (3) thrombosis of the vena ophthalmica, which empties into the sinus, (4) the escape of pus or extension of inflammation into neighboring parts, as the orbit, etc., (5) implicating the optic and olfactory nerves or the third, fourth, and six pairs, (6) encephalitis circumscripta or diffusa with abscess. Duplay, Lallemand, Bourdet, Baratoux, and others have reported cases of this kind. Just here I would like to refer to a subject that has to do with the brain indirectly. It has been affirmed that the necrotic foci within the nose may by their reflex irritation cause characteristic psychic symptoms. Rougié reported a case of this kind in which the mental condition disappeared immediately upon the removal of the sequestrum (the inferior turbinated), but I am inclined to believe that the mental symptoms had more of a local syphilitic origin, and that they improved rather as the result of specific medication than as a consequence of the removal of the necrosed mass. It is reasonable to suppose that syphilitic nasal manifestations may give rise to reflex phenomena—may increase the gravity of a mental disorder —but in reviewing the cases I am led to believe that the syphilitic nasal disease has no specific characteristic mental accompaniments.

The deformities which may result are most various. I have seen a case where the entire outer nose was gone, and in which the antrum, nose, the left orbit, and mouth formed one cavity. The best known deformity is the so-called saddle nose, but it must be remembered that this is not always the result of syphilis. Michaelson has reported a case in which a traumatic phlegmon of the structures composing the bridge of the nose produced this deformity, and Seifert has observed a similar case in his practice. I have a like case to add occurring in a woman who had osteomyelitis of the nasal bones with formation of sequestrum following trauma. Seifert declares that saddle nose may result, when atrophic rhinitis occurs in the first years of life, by the contraction of the scar tissue in the cartilaginous and membranous tissue upon which the bridge rests. I can agree to this, and would add that the deformity is more accentuated in those whose family nose is a bit tip-tilted.

Diagnosis.—The process which most resembles the syphilitic is the tubercular. In many cases the diagnosis is beset with great difficulties, especially if we have to depend upon local appearances alone. The shape of the syphilitic ulceration of the sæptum is, in the large majority of cases, longitudinal, while the tubercular is usually round or irregular in form; but we may have a circumscribed gumma in the nose which results in a round ulcer, and we have tubercular ulcers which are longitudinal. These are, however, rare, and occur with greatest frequency on the turbinated bodies. The syphilitic infiltration spreads beneath the mucous membrane or within or between the perichondrium and cartilage, causing necrosis of large areas of bone or cartilage in a very short time. This never occurs in tuberculosis (Seifert). The tubercular perforations of the sæptum take place gradually. The tubercular granulations slowly take the place of the osseous tissue. Then, too, the nasal tubercular manifestations are in the large number of cases preceded by the same disease on the face. The age of the patient is of some value, nasal tuberculosis occurring most frequently in the young. To conclude, we may examine pieces of excised tissue under the microscope to ascertain its histological structure or for the presence of *Bacillus tuberculosis*, or we may make injections of scrapings into the anterior chambers of the rabbit's eye. The local appearance of leprosy and anthrax may resemble those of syphilis, but the general appearance of the several diseases are so distinct that I shall not treat of them. It may be difficult without microscopic examination to differentiate the primary and some late syphilitic manifestations of the nose, especially of the alæ, from malignant disease. Then we have the mixed infection of tuberculosis or leprosy with syphilis, and of carcinoma developing on a syphilitic base or scar. All this makes the diagnosis extremely difficult in many cases, and requires the greatest skill and experience on the part of the diagnostician. In all cases of doubt the balance of the mucous membrane covering the upper air-passages should be carefully inspected, and especially is this so regarding the post-nasal space, for it is this area that is most frequently the seat of late syphilitic manifestations. In all ulcerative processes within the nose a history of syphilis should be carefully sought for as well as syphilitic manifestations in other portions of the body which may exist at the same time. Failing this, we are not justified in regarding the process non-specific if there be bone necrosis and a sequestrum, but should at once institute specific treatment. In certain cases some difficulty may be experienced in differentiating between necrosing ethmoiditis and syphilis of the middle turbinated body when the latter disease is confined to that region, as was the case reported by Moldenhauer; but such instances must be rare. The slow course, the absence of slough, the typical "fissure," the relative smallness or absence of the sequestrum in necrosing ethmoiditis, are distinctive features which should prevent us from making a mistake. I have already called attention to the possibility of mistaking a syphilitic infiltration for a simple hypertrophy or even a simple deviation, as well as to the differences which exist between simple and specific coryza of the early stages. In case of trophic ulceration within the nose occurring in the course of bulbar tabes we have the general nervous symptoms to guide us in reaching a correct diagnosis.

Treatment: Prophylaxis.—All persons coming in contact with syphilitics, such as attendants, servants, etc., should be instructed as to the possibility of their becoming infected, and preventive measures observed.* As has been pointed out in the first part of this paper, the social snuff-box may serve as a bearer of contagion.

Every one who has been infected with syphilis should subject his nose to inspection at the very first symptom of nasal trouble; and to prevent recurrence in those cases of healed nasal syphilis the nose should be inspected every two or three months for a year or more.

Actual treatment is constitutional and local, and one is as important as the other. There has been some discussion as to the exact value of local treatment in nasal syphilis. It is quite true that light manifestations in the nose may disappear under constitutional and without local treatment, but even in these cases the annoyances of the nasal symptoms are allayed and healing hastened by topical treatment, and in all cases the dangers are diminished by local applications. There are other cases that do *not* recover under constitutional treatment alone. The immediate disappearance of the intolerable stench upon the removal of a sequestrum is a nice example of the beneficial results of local measures.

In selecting the constitutional remedy I am guided largely by the rules which were formulated by the famous rhinologist Massei:

1. Mercury (*a*) in secondary manifestations, (*b*) when the patient has not had a thorough mercurial course, (*c*) when the iodides are not borne.

2. Iodides (*a*) in the tertiary forms, (*b*) when the patient has had a thorough mercurial course, (*c*) when this is found to be without effect.

3. Mixed treatment (*a*) in the more grave forms, and when the mercury is not active enough.

4. Internal administration of mercury in the ordinary lighter forms; inunctions or hypodermic injections in those cases where the internal administration is badly borne, or when the disease threatens extensive destruction.

In those cases in which the iodides are indicated and the potassium salt is not borne we may substitute the iridium salt with safety. I have lately been using an ointment for inunctions in which the metallic mercury is replaced by calomel. It is made in the same way as the gray ointment, except that lanoline is used instead of lard. It makes a much more elegant preparation and is almost equally efficacious.

Local Treatment.—Cleanliness is one of the most important factors in all nasal therapeutics, but in nasal syphilis it becomes *primus inter pares.* Each time the patient is seen by the rhinologist, the nose, in its every part accessible, should be carefully cleaned by means of cotton pledgets carried on applicators. This should be done under illumination; and if this mode of cleansing becomes a habit, it will be found to frequently render valuable assistance in diagnosis and prognosis. The patient should douche the nose at home from two to three times daily. The drugs suitable for nasal irrigation in syphilis are numerous. In the simple specific coryza the solution should be merely bland and alkaline. It should be cleansing only, and mildly antiseptic. For this purpose I use equal parts of a powder consisting of bicarbonate, biborate, and chloride of sodium. As much of this as may be held on the point of a penknife blade is dissolved in as much warm water as will fill the douche cup illustrated below. One half of the contents of the receptacle is poured into each nostril by the patient. At the same time the head is thrown back slowly, and the patient says a long-continued "Ah!" in order that the solution may not get into the pharynx. In the same way we may use a one-per-cent. solution of bicarbonate of sodium. If there is a good deal of discharge, which has a tendency to decompose or desiccate, we may use a one-per-cent. solution of salicylate of sodium, or a two-per-cent. solution of salicylic acid, or a one- to two-per-cent. solution of carbolic acid by means of a gravity douche, provided there is ample room for escape of the solution from the nose; otherwise it is better to depend upon the nasal bath, carried out by means of the cup shown in the cut. If there is ulceration or odor, or if for any reason the parts need a stimulating douche, we may use one to two drachms of a fifty-per-cent. solution of aceto-tartrate of aluminum to a pint of warm water. The corrosive-sublimate solutions are not fitted for use in the nose. They are too irritative when they are used strong enough to be of practical antiseptic value, and for cleansing purposes they are not only inefficient, but are deleterious on account of the property which they possess of forming a tenacious insoluble albuminate of mercury with the mucous and pathological secretions of the nose. Aqua picis is a most excellent wash when it is necessary to frequently repeat the douche. It is not only an effective deodorizer, but its repeated application is not followed by gastric disturbance. The same can not be said of carbolic acid or even of salicylic acid.

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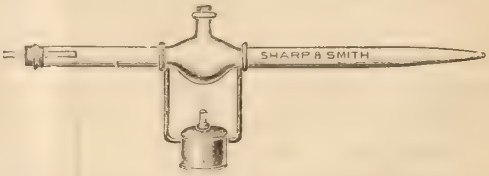
* Apropos, the common cigar-clipping machines which are to be found in every cigar store would seem to be a source of danger in this regard. I have many times seen men first moisten the cigar with the tongue and lips before using the cutter, and in two instances the men were in the infectious stage of syphilis to my certain knowledge.

The cleansing of the infantile nose is an important matter. Here desiccation occurs with greater rapidity than in the adult nose, and, as the lumen is small, occlusion sets in very soon. We must be careful to keep the air-way clear, or the nourishment of the suckling will be interfered with. It is well to cleanse the nose as often as the infant is fed. Just before each feeding a drop or two of warm liquid vaseline is dropped into each nostril. This has the effect of loosening the scabs, thus facilitating their removal. Their actual removal may be accomplished in several ways: by means of the air douche or Politzerization, or by means of the fluid douche or the cotton pledget. The air douche is very simple in its administration. An ordinary Politzer bag with a Lucae tip is inserted tightly in one nostril, and, without closing the opposite one, the air in the bag is forcibly expelled by compression. If the child cries it only aids in the operation by closing off the post-nasal space from the pharynx by elevating its palate. Thus the scabs and discharges are forced from one nostril into and out of the other. Occasionally they are forced into the pharynx and then swallowed. This furnishes one of the greatest objections to this mode of cleansing. Notwithstanding this, I regard the air douche as the most convenient, and as effective as any other means of cleansing the infantile nose. The fluid douche—*i. e.*, syringing—is difficult of accomplishment in the infant, and in the struggle that is bound to ensue the nose may be more or less injured, even with a blunt nose piece to the syringe. However, the fluid douche in the infant is not a whit more effective than the dry douche. It may become imperative to free the nose from the obstructive matter, and the air douche may have proved futile. In such cases the dry cotton pledget is to be depended on. If necessary, the whole of the obstructing mass may be forced into the pharynx, whence it may be removed by the forceps, expelled by the infant, or the infant may swallow it—an occurrence not to be sought, but, having occurred, not to be too much deplored. At least, the results gained by thus ventilating the nose warrant the risk of such an accident. Once it is thoroughly cleansed, it is comparatively easy to preserve a good degree of freedom from accumulation in the nose by means of the fluid vaseline, the cotton pledget, and the air douche. As a means of local treatment in the infant I have used local mercurial fumigation by means of the nasal fumigator with satisfaction.



The nasal fumigator. Calomel is placed in the porcelain receptacle. The alcohol lamp below is lighted, and as soon as the fumes from the calomel are liberated they are blown into the nostril by means of the breath or a double balloon.

The infant is not refractory to such an application, and the results are gratifying. With infants whose nasal mucous membranes are the seat of secondary ulceration I have found the spray composed of the following ingredients beneficial and acceptable to the patient:

Iodoform......................	1;
Sulphuric ether................	10;
Albolene......................	50–100.

This combination is serviceable also in cases of simple syphilitic coryza in the adult. Or when there is extensive secondary ulceration we may use an ethereal solution of iodoform (one to three); but in many cases the odor is objectionable.

For the treatment of plaques and secondary ulcerations on the mucous membranes of the upper respiratory tract nothing has given me such satisfaction as the nitrate of silver. I use the mitigated stick fused on the end of a probe. The condylomata or ulceration are carefully touched with this, and under such applications, combined with proper constitutional treatment, rarely last over four or five days. The application should be repeated when the whitish deposit produced by the nitrate has disappeared. This occurs usually in twenty-four to forty-eight hours. In cases where scabbing occurs in the vestibule three-per-cent. nitrate of mercury ointment applied two or three times daily is most satisfactory. In tertiary indurations which have not ulcerated the daily application of a ten-per-cent. iodo-glycerin solution over the affected area hastens the resorption of the granuloma.

In tertiary ulcerations we should first remove all fungoid excrescences. Indeed, it is good routine practice to always scrape tertiary ulceration in the nose before beginning local medication. I do not recommend the galvano-cautery for such purposes, because it is too violent in its action and tends to destroy tissue that might reform. Ten-per-cent. iodo-glycerin, iodol, and ten-per-cent. nitrate-of-mercury solution, are all of value in the treatment of ulcerations of this kind. They should be used on the cotton pledget excepting, of course, iodol. Sequestra should be removed; but in the removal we should be careful to do as little injury to the nose as possible. It is seldom that the immediate removal of sequestra is imperative. Small pieces of necrosed bone may be easily removed through the natural openings, either anteriorly or posteriorly. But in the case of large pieces, the removal of which would necessitate the laceration of the surrounding tissues, it is better to wait until their size has been reduced, or to crush them in smaller bits by means of forceps. For the purpose of reducing the size of such sequestra we may employ irrigation several times daily with hydrochloric acid:

Acid. hydrochlor. dil. . . . . 4·4;
Aquæ destil 280;
Aquæ silviæ . . . . 140.

Or we may use the electro-cautery for the purpose of desiccation of the sequestra, as advised by Voltolini.

Yet, as in the case reported by Verneuil, when from sepsis the immediate removal of sequestra became imperative, we may be obliged to resort to external operation.

We should always be careful to prevent synechia when we find it possible. The deformities resulting from loss of bony support, as, for example, saddle nose, must be corrected by prosthetic appliances such as those recommended by Letrevant and Martin (La Prosthèse immédiate). The device perfected by Dr. F. E. Hopkins (*New York Medical Journal*, vol. lxi, No. 23) seems worthy of note, but I have no personal experience with it. As a means of hiding slight deformities of the bridge I have had several of my patients use spectacles. The *pince-nez* is not to be recommended for this purpose, on account of the pressure which it exerts upon the diseased parts, until the inflammatory process has long since passed away.

31 Washington Street.

A PLEA FOR THE MORE EXTENSIVE USE OF ANTITOXINE IN DIPHTHERIA.

RÉSUMÉ OF ONE YEAR'S EXPERIENCE. INDICATIONS AND CONTRAINDICATIONS FOR ITS USE, WITH SOME PRACTICAL POINTS IN THE APPLICATION OF THE SAME.

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When, in September of last year, I had the honor of being invited by Professor Roosa to read a paper on antitoxine before the New York Post-graduate Clinical Society little was known of the therapeutic value of this drug on this side of the ocean. My experience at the time was limited to only a few cases in this city, but by far the most was learned in Europe from such authorities as had been using the remedy in the laboratory as well as at the bedside.

The history of the manufacture of this wonderful agent has been so often described in detail by myself and by others that I do not think it wise to again rehearse it, but would rather speak of the practical value gained by the use of this remedy.

Several papers have appeared by me from time to time, notably, however, the paper published in the *Medical Record*, October 6, 1894, in conjunction with a paper by Professor Baginski, from whom I learned the clinical value of this new therapeutic agent. Later, a series of papers appeared, with more experiences, in the *Medical Record*, November 17, 1895; also in the December issue of the *Post graduate;* a very elaborate paper in the *American Journal of the Medical Sciences* for January, 1895; then a very complete article, embracing in all two hundred and twenty-five cases, appeared in the *Medical Record* of April 6, 1895. This paper was read before the German Medical Society of this city on March 4, 1894.

In our country so much has been said in favor of this valuable remedy that what has been said against it would be as infinitesimal as an ordinary mortal trying to swim against the great tide of success! At the Munich Medical Congress, last April, it was the unanimous opinion that no remedy had up to the present time been used in diphtheria that, from a scientific standpoint, exerted a healing effect. In looking over the materia medica and studying what remedies can be used with success in diphtheria, there is not a single drug with which we can positively say we can cure diphtheria. Modern science has taught us that the local manifestation of the disease can be determined by making a culture from the pseudo-membrane, and in these cultures we find at times a streptococcus, at other times the streptococcus in combination with the Klebs-Loeffler bacillus, and again at other times we find the pure Klebs-Loeffler bacillus; so that there are various clinical and bacteriological manifestations which, although appearing differently under the microscope, prove to the clinician that they are probably various forms or modified forms of the same disease, and are virtually combined under that one term, diphtheria. We are, however, dealing not only with the local manifestations of the disease, but with the complications, and it is rare to find a patient with a simple, ordinary, membranous diphtheria—proper care being taken—to die, unless some special reason exists for it. Let me illustrate: If I were called to a robust child, in good hygienic surroundings, that had a slight elevation of temperature, and found a small diphtheritic patch of membrane on one or both tonsils and the glands of the neck swollen, if there was a good, strong, regular pulse, and I had a good, common-sense mother or nurse looking after it, I should certainly expect a recovery if the ordinary rules of antisepsis (antisepsis, practically speaking, meaning only cleanliness) were carried out; whether the ordinary salt solution or boric acid or permanganate of potassium were preferred would be immaterial, for the latter merely tend to destroy the germs on the surface and do not by any means destroy the germs in the deeper structures.

In a case like the one above described I should invariably give a good prognosis, and have found that by injecting five cubic centimetres of a good standard preparation of antitoxine I could accomplish all that was desired without subjecting the body to the poisonous influences of the internal administration of bichloride of mercury. I am confident that every clinical observer can go into the wards of a diphtheria hospital and pick out the patients that had been subjected to the administration of bichloride of mercury, for there is an extreme pallor of the skin, a so-called anæmic appearance, which is usually recognized by the skilled clinician, so much so that he can recognize at once those cases that have received a bichloride treatment and those that have not. The same holds good of those cases treated with calomel, whether by fumigation or by its internal administration. So much can be said for bichloride of mercury, that enough bichloride of mercury can never be introduced into the body to render the blood thoroughly aseptic. If this could be accomplished, then we should not only kill the germs, but at the same time kill our patient.

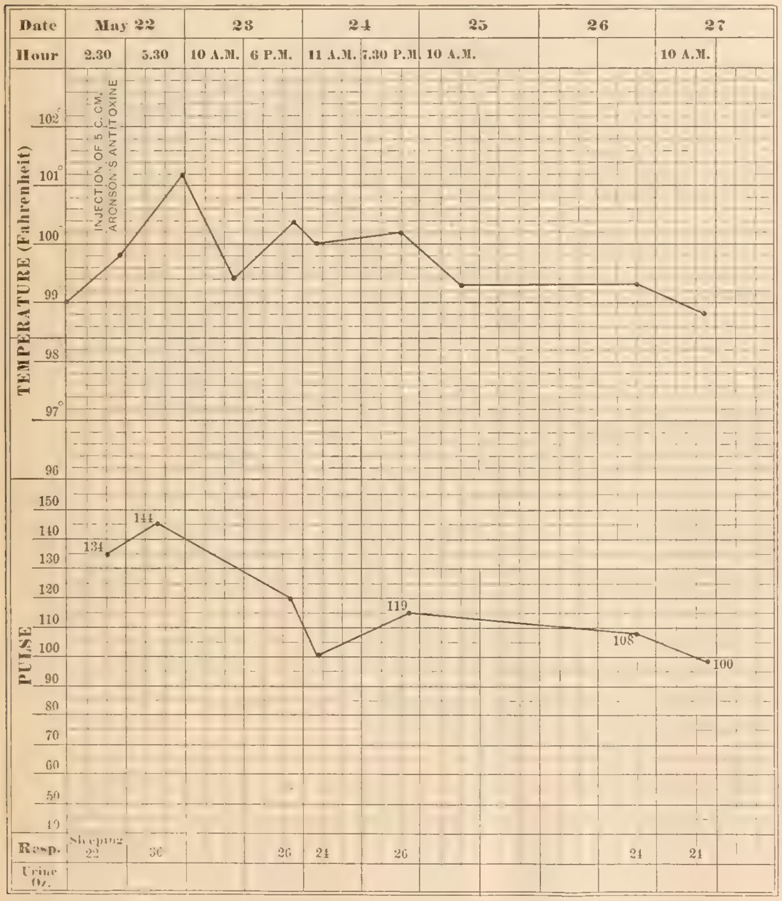
Some very interesting cases were reported by me at the Section in Diseases of Children of the American Medical Association held at Baltimore on May 8th. It was highly interesting to hear some very eminent gentlemen in our profession extol antitoxine, and to hear the almost unanimous verdict in favor of this new agent during the course of the discussion. Let me repeat again what I wished to impress in my paper read at Baltimore, that antitoxine and blood serum are two distinct remedies, or rather, that they are not synonymous terms. While we may have blood serum manufactured and sold and labeled as antitoxine, a great many failures that are reported are due to the fact that these specimens are blood serum pure and simple, and do not contain any antitoxine, and hence are worthless for therapeutic purposes. It is therefore of the utmost importance to have an absolutely reliable remedy before promising any success; and how disappointed do we feel if a patient, let me say, receives a dose of morphine to produce healthy refreshing sleep, and tells us the following day that he was awake all night, due at times to either the smallness of the dose or the unreliability of the drug used. If it is proper for practitioners all over the world to specify a certain chemical or a certain drug and ask for it, or if it is proper to specify a certain brand of wine when we desire to get it, then I do not see why we can not specify a certain brand of antitoxine in order to test the real merit of an article so valuable in the treatment of this disease. It is not my intention in the course of this paper to belittle the preparations of antitoxine manufactured and sold in our country; but I have had the greatest success with the antitoxine manufactured at Berlin and tested by the German Government, and the results have been so satisfactory that I could not but continue in the present path of success.

On April 13th I was called in consultation by Dr. Newfield, of 111 East One Hundred and Sixteenth Street, to see a case with severe laryngeal, pharyngeal, tonsillar diphtheria. The case was seen between three and four in the afternoon of Saturday, and at the time that we saw it, it was evident that nothing but the gravest prognosis could be given. The child had been very ill, and although I injected five cubic centimetres of Aronson's concentrated antitoxine in the interscapular region, I told the attending physician that in my opinion it would be wise to hold ourselves in readiness to intubate the child within five or six hours if the symptoms of dyspnœa and laryngeal stenosis did not disappear. The doctor promised to meet me the following morning at eleven o'clock, provided I was not called on the Saturday evening in question, to intubate. For some reason the attending physician was very considerate, and, not wishing to trouble me, as the patient was several miles from my house, called in a laryngologist, Dr. Emil Mayer, to perform the intubation. When I saw the case on Sunday morning I had the pleasure of meeting, besides the attending physician, Dr. Newfield, Dr. Emil Mayer, and Dr. N. S. Roberts. This was about eighteen to twenty hours after my injection of antitoxine had been given. Although by midnight the child had been intubated by Dr. Mayer, the violent coughing had forced the tube out, and when we saw it on Sunday morning there was marked depression at the scrobiculus cordis and at the jugulum on inspiration, which are such prominent symptoms of laryngeal stenosis wherein we almost always require either to intubate or to perform tracheotomy. Through the courtesy of the three physicians mentioned, I was permitted to introduce a suitable tube as rapidly as possible. There was an immediate relief of the stenosis following the introduction of the tube, so much so that two days later I had the pleasure of a visit from Dr. Newfield, who told me that the child was absolutely well, so far as he could see; that not only had the stenosis of the larynx remained away since the introduction of the tube, but that the pseudo-membranes, which had been so very visible on Saturday and also on Sunday, had gradually melted away and disappeared. This was in all about two days following the injection of this one bottle of Aronson's concentrated antitoxine containing five cubic centimetres.

In all my cases my experience with intubation has been uniformly good where the treatment has been combined with the use of antitoxine. I have thought it, however, safer generally to allow the tube to remain *in situ* three or four days, so that I asked the doctor to please allow the tube to remain in the child's throat until Thursday, which was in all less than four days. I removed the tube on Thursday, and the child has been well and remained well since that time. No emaciation, albuminuria, or other symptom or complication has arisen since then, and I believe that this is one of my most successful cases, or at least one of the usual successful class that I have been reporting from time to time.

In most cases, especially where we are not dealing with a very intelligent class of people, I have found that the attending physician is usually bothered to administer some medicine, so that we have almost always been forced to administer a placebo in most of our cases. If a placebo is given we can give anything that will do neither good nor harm in order to quiet the minds of the parents.

An equally instructive case is the following: W. S., three years old, was seen by me on the 23d of May. Previous history: Had had measles in March, with a sequela of otitis media of the left ear. In the same month a case of diphtheria occurred in the house. The child was well until Sunday, May 19th, when the first symptoms appeared. Languor, general malaise, vomiting on Sunday and again on Tuesday; epistaxis every night as well as during the day on exertion and excitement. When seen on Wednesday, the 23d of May, the child was in the following condition: Temperature, 99·9° *per rectum;* pulse, 134; respiration, 22. Skin active and normal, bowels regular, appetite good, tongue clean; child very heavy-looking, peevish; swelling of the anterior mastoid and submaxillary glands. The throat contained a heavy, yellowish-gray membrane, covering the tonsils more on the left than on the right, the uvula, and the posterior pharyngeal wall. The nasal passages were involved, shown by a considerable expectoration and a dirty ichorous discharge from the nose. A bacteriological examination of the membrane showed the presence of the Klebs-Loeffler bacillus. In the same family two other children were found, the one with a severe form of acute pharyngitis and very mild septicæmia, but no visible membranes could be located by inspection. Another child showed slight patches on the pharynx and tonsils, but did not have any symptoms of malaise, or a temperature elevation, or anything which showed the presence of diphtheria. This child was running about in apparently good health, so that in this family we had the first case, which was very malignant; the second one, which was mild; and the third, which was really in the period of incubation. I injected five cubic centimetres of Aronson's antitoxine in the interscapular region, using the ordinary antiseptic precautions with the syringe as well as local disinfection of the parts to be used for injection, and covering the injected place with a small film of collodion, and irrigated the nose and as much of the throat as possible with the ordinary normal saline solution. The temperature rose in the evening to 101° F., which was a slight reaction from the injection. The child was very bright, having slept the whole of this afternoon. After that the improvement was steady. The only point of importance was that the throat was practically clean four days following the injection. An interesting point was the condition of the child's temperature, which is well illustrated in the accompanying temperature chart.



For the careful report in this case, as also for the subsequent taking of temperature, I am greatly indebted to Dr. A. Levinson. This child was given the injection in the presence of Dr. Nelson, Dr. Howard B. Gates, Dr. Tinley, Dr. Selling, and Dr. Levinson. There was also a slight laryngeal stenosis with a croupous cough, so that a diagnosis of nasal, tonsillar, pharyngeal, uvular, and laryngeal diphtheria was made. This case showed such rapid improvement that nothing but the antitoxine and the warm salt water locally was used.

Such cases I could record by the dozen. An important point in conjunction with this case is the fact that a child which lived two flights above this one with diphtheria, in the same house, was attacked with a severe fever and convulsions. When I saw the child, which was a few days after I had given the injection in this case of diphtheria, it was practically moribund, and I pronounced the case a hopeless one of diphtheria. The child died before I left the house. I am confident that in the case in which I used the injection, which was of the extremest type of diphtheria that we have seen during this winter, the patient would have practically succumbed to the septic influence of diphtheria, for I believe that we all recognize that where pharyngeal, tonsillar, and uvular diphtheria exists, we can in a good, healthy child under good hygienic conditions give a fair prognosis; but that where the elements of laryngeal complication, with stenosis and croupous cough, exist, marked dyspnœa, with a tendency to cyanosis, with distinct evidence of carbonic-acid poisoning, we are justified in calling such cases very grave ones. The same is also true where we have nasal complications, for in my experience nasal diphtheria has been one of the worst to combat in all the cases that I have had.

Another equally instructive case is one which I saw in consultation with Dr. S. H. Smyth, of No. 112 East Tenth Street, some time ago. I prefer to report the case from the pen of Dr. Smyth. He writes:

"I was sent for to see B. B., female, aged ten years, on May 13th. On the previous evening the child had a chill, followed by fever and vomiting. As she complained of sore throat, I made an examination and found both tonsils covered with a dirty gray membrane. The temperature was 103°, pulse 120. Diagnosticated diphtheria.

"*May 14th.*—Temperature, 101°; pulse, 100. Membrane had extended, covering the uvula as well as the tonsils. There was an excoriating discharge from the nose, together with a croupy cough.

"*15th.*—Symptoms much the same. Breath very fœtid.

"*16th.*—Dr. Fischer saw the child with me, and, concurring in the diagnosis, at my request he injected antitoxine. This was at 4.30 P.M.

"*17th.*—No particular change noticeable, except that the discharge from the nose had stopped. Temperature and pulse both seemed normal.

"*18th.*—Membrane began disappearing from left tonsil. No cough; temperature and pulse same.

"*19th.*—Membrane disappeared entirely from tonsils, leaving the parts very red and inflamed.

"*20th.*—Membrane entirely disappeared. The child did well, except that the throat was somewhat painful until the 26th, when there was a slight patch on either side of the uvula which disappeared entirely by the next day. After this the child made a steady recovery. There is no paralysis. There was no albumin in the urine at any time. I might say that a report from the health department verified the diagnosis."

In Dr. Smyth's case judicious treatment, consisting of hygiene, diet, and supporting treatment generally, was all that was necessary to complete the cure in that case. Dr. Smyth was very careful to use the proper local antiseptics previously, and did not resort to antitoxine until he believed that the disease would extend either upward or downward, or until he saw that there was a nasal involvement. The patient, besides, was an extremely restless and nervous girl. In these cases so much more patience is required to apply the old forms of treatment, consisting of spraying or swabbing the throat generally. In such cases as these the rule has been to administer one injection of antitoxine and await the effect of the same in the following thirty-six to forty-eight hours, and, if no marked improvement existed, then I have resorted to a second injection of the same dose as the first.

A similar case to the one just reported I had in consultation with Dr. Bullard, which I have previously reported in a large series of cases in the *Medical Record*, April 6, 1895. In Dr. Bullard's case the child struggled against pharyngeal irrigation, and besides absolutely refused to take a mixture that the attending physician prescribed, consisting of iron and glycerin, and finally was so obstinate that it refused food, and Dr. Bullard told me he believed that nothing would be of any service as long as the child remained so obstinate. The surprising benefit following the injection of antitoxine made by me was so marked that all symptoms disappeared within a few days. We gave the antitoxine a careful trial in Dr. Bullard's case, for we discontinued all other forms of medication.

One of the worst cases that I have attended this year was sent to me through the courtesy of Professor H. J. Boldt, and I reported it at the meeting of the Pædiatric Section in Baltimore, May 8th:

> This child (Dr. Boldt wrote to me asking me to intubate the child R. on Sunday, April 7th) I saw at noon and found it in a condition of extreme dyspnœa, cold extremities, cold perspiration, sunken eyes, contracted fontanelle, gasping for breath. The examination showed a very weak heart sound, pulse feeble, little or no appetite; the bowels very loose; the child in extreme agony, panting for breath. The well-known croupous cough was occasionally heard, besides the familiar inspiratory crowing that we are used to hear in laryngeal stenosis. An inspection of the throat showed nothing abnormal. The tonsils, pharynx, and uvula were apparently clean, and but for the presence of a slight reddening I should not have pronounced it a case of diphtheria. A culture made and sent to the health department showed, however, the presence of Klebs-Loeffler bacilli. I very rapidly intubated with a No. 2 tube. The child was immediately relieved. The stenosis that existed seemed to gradually disappear after the reaction from the intubation subsided. Besides ordering a mustard bath, I gave nothing. In the evening the mother reported favorable progress. The child improved fairly well, slept all night, and, although we had quite some difficulty to encounter with feeding, the child was gaining strength. The following day I ordered rectal feeding, using the yolk of an egg beaten up with starch water and occasionally an emulsion containing beef tea and other nutrient enemata, and allowed the tube to remain undisturbed. I had found that after a few days the child suffered neither thirst nor hunger and got along very well with feeding *per rectum*, so that I advised the mother to allow the mouth to remain absolutely dry, and when the child had very severe thirst I told her to place a piece of ice, surrounded by a piece of clean linen, in the child's mouth in order to cool it.
>
> In several of my cases I have been extremely successful in avoiding the usually fatal complication of pneumonia in the course of intubation cases by not feeding by the mouth, and I believe if more children were fed by the rectum the mortality in intubation cases would be greatly lessened. In this case, after three days, the child had improved very much, so that I removed the tube. The mother called on me an hour later, saying that the symptoms of harsh breathing and croupy cough (just as I had found them three days previous) had reappeared, and begged of me to reinsert the tube. The moment I put the tube *in situ* the child's breathing was again apparently normal, and but for the slight shock following the introduction of the tube there was nothing unpleasant from the reaction of the second intubation. I again cautioned the mother regarding the feeding and allowed the child to progress in the natural way. Solid stools were passed once a day and sometimes even but once in two days, and it was necessary once during the course of the treatment to give an enema, cleaning the child's bowels, showing that a carefully administered enema will not only be retained but be absorbed by the rectum, and, being guided by the condition of the child's pulse and the heart's action, I am persuaded that this child received ample nourishment to give it strength.

A very bad case was reported by me in the *American Journal of the Medical Sciences* for January, 1895, which was seen by me in consultation with Dr. R. K. Valentine, of Brooklyn. Under ordinary conditions a most fatal prognosis would have been given, and it was only judicious attendance and careful attention to details of supporting diet that enabled Dr. Valentine to keep his patient for three or four days, in a hopeless case of septic diphtheria, in a tolerably fair condition. The case was reported *in extenso* in the *North American Journal of Homœopathy* for February, 1895, to which I should like to refer for the details of this instructive case. The child received one injection of antitoxine subcutaneously in the interscapular region in the evening, and the following day it was so improved that the benefiting influence of the antitoxine was visible. Two or three days following the injection the doctor agreed with me that what had been a malignant and septic case of diphtheria was changed into a mild form of diphtheria—the pulse, heart's action, and general appearance of the child, previous nose-bleeding, all changed, and the child was rapidly improving. The patient was discharged cured within a week after the injection of the antitoxine.

A very instructive case was one which I saw on July 17, 1895, in the children's department of the German Poliklinik:

> The child had been ill two days and had been attended by a physician who had diagnosticated fever (?). A careful exam-

ination of the throat made by me showed the presence of large patches of dirty membrane covering the pharynx, the tonsils, the uvula, and as much of the throat above and below as could be seen with the naked eye. A croupy, barking, hoarse cough indicated the involvement of the larynx, and a further examination of the chest wall showed extensive dyspnœa; besides the general appearance of the child indicated a rapid carbonic-acid poisoning. There were blueness of the finger nails, cyanosis, and the generally livid expression of the child indicated that it was fast succumbing to the septic influences of diphtheritic poison. The main thing when I first saw the child was to relieve the stenosis and allow a proper influx of oxygen into the lungs. I therefore rapidly intubated with the assistance of Dr. Joel. This was at 9 P. M. The stenosis was at once relieved and the child allowed to go to sleep to overcome the exhaustion following the intubation. After giving the usual precautions as to feeding by the mouth, I ordered an ice bag on the top of its head and cold spongings to the body at intervals of fifteen minutes to check the perspiration and to freshen the child up generally. The following morning the child's breathing was much easier and the stenosis entirely relieved; but, as the temperature, which had been at the time of intubation 101°, had gone up the following morning to 102°, and the pulse, which at the time of intubation had been 130, had gone up to 142, I decided that the inflammatory condition and the diphtheria generally had not been improved. I then injected five cubic centimetres of Aronson's diphtheria antitoxine in the interscapular region. On the evening following the injection of antitoxine the temperature still remained as in the morning, 102°, pulse was still 140, and there was no visible sign of improvement. The stenosis had been entirely relieved, judging by the quiet breathing. The child, when I saw it, was asleep and appeared to rest very easily. The difficulty of feeding was manifest, and I gave instructions not to feed at all by the mouth, but to rely in this case solely on nutrient enemata. I ordered the yolk of an egg beaten up with starch water, alternating with starch water and beef tea and starch water with veal tea, made in the same manner as beef tea, giving an injection every two hours. Before administering the nutrient enema I instructed the mother of the child to wash the lower bowel (rectum), using a teacupful of ordinary Castile-soap water to cleanse away any fæces that might possibly be there. As in the case previously reported above, not only was the injection very easily retained, but it was necessary to inject a pint of water containing some glycerin in order to cause a free movement of the bowel on the second day following the commencement of the nutrient enemata. Large masses of solid fæces of a brownish-yellow color were passed with the enema, showing not only that the nourishment was well absorbed, but that it was easily retained until the injection was given. The pulse, which had before been weak, was on the second day following the injection of antitoxine, combined with this treatment, strong, full, and regular. The child appeared very bright and seemed to be gaining strength. This treatment had been continued in all for five days, when the membranes, which had previously completely covered the throat, as mentioned above, had entirely melted away. No signs of stenosis existing, I decided to remove the tube, which was done with no unpleasant symptoms following. There exists to-day, about nine days after treatment, a slight cough and also a slight hoarseness, which are possibly the effects or the results of pressure by the intubation. The temperature is normal, the pulse is between 95 and 100, the appetite is ravenous, the bowels are regular, the urine, which had been examined several times, has shown only slight traces of albumin, but enormous quantities of phosphates or urates and casts microscopically. There has been no eruption in this case following the injection of the antitoxine, or any unpleasant symptom which could be directly or indirectly attributed to the action of the antitoxine. The specimen used was of the latest importation, which, as is well known, is tested at present by a special officer detailed from the German Government for this purpose.

(*To be concluded.*)

BACTERIOLOGICAL AND CLINICAL NOTES ON OZONE.

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SINCE the recent marvelous development of the science of bacteriology every agent of known destructive action on the bacterial world has come in for a share of investigation and has been assigned its place among the germicides. Among these agents is ozone, which has not lacked careful study and patient investigation, but peculiar conditions have rendered difficult a conclusive report of its bactericidal value.

As pointed out by Ohlmüller in his report, *Ueber die Einwirkurg des Ozons auf Bakterien*, 1892, many observers have been hampered in their experiments by the small quantities of ozone at their disposal. As Ohlmüller himself was able to obtain ozone in practically unlimited quantity his experiments are more exhaustive and satisfactory. Dr. W. J. Morton * summarizes the results of Ohlmüller as follows:

> He found during his researches, under these more favorable conditions, that if the ozone and the bacteria were dry, no effect of the ozone on the bacteria was apparent. With the bacteria dry and the ozone moist, typhus bacilli were destroyed in thirty minutes with forty-six litres of ozonized air = 289·8 milligrammes of ozone. With ozone and bacteria both moist, typhus bacilli were destroyed in an hour, one hundred and eight litres of ozonized air being consumed. His experiments with pus showed that after twenty-four hours, with a consumption of two litres of ozonized air a minute = 11·5 milligrammes of ozone, the bacilli were killed (*Staphylococcus pyogenes aureus*), as was proved by inoculation of living subjects. Typhus, cholera, and anthrax bacilli placed in distilled and sterilized water were destroyed. Anthrax spores, after passing through water, 89·9 milligrammes of ozone; anthrax bacilli, fifty-eight milligrammes of ozone; typhus and cholera bacilli, 19·5 and 16·5 milligrammes of ozone.

Ohlmüller sums up by stating that the results of his experiments establish with certainty that ozone has a powerful destructive action on bacteria if the water containing them be not too strongly impregnated with lifeless organic matter.

In a report to Dr. Morton, dated March 26, 1893,† Dr. W. H. Park, of the New York Health Department, states the results of his experiments with ozonized air as follows:

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* *New York Medical Journal*, June 23 and 30, 1894.

† *Ibid.*

A considerable amount of a twenty-four-hours' growth on agar of the *Staphylococcus pyogenes aureus* was scraped off and suspended in five cubic centimetres of sterilized filtered Croton water.

A culture of Klebs-Loeffler or diphtheria bacilli was treated in a similar way. Small pieces of sterilized absorbent gauze were saturated with these cultures thus suspended in water and the pieces placed on a sterilized platinum wire net. This was placed in a wide tube through which a fifth of a cubic foot of ozonized air passed a minute. The bacteria were exposed different lengths of time—the staphylococci from five to thirty-five minutes and the diphtheria bacilli from fifteen to forty-five minutes. On removal the gauze was still moist. Cultures of the staphylococci were made on agar and in gelatin. Those exposed for five minutes gave about as many colonies as the control, and those exposed the longest (thirty-five minutes) about half as many. The cultures of the Loeffler bacilli were made on solidified blood serum. Those exposed fifteen minutes showed some diminution in the number of colonies on the cultures and those forty-five minutes still more, but still there were very abundant colonies. The results showed that the staphylococci and the diphtheria bacilli, when held on a moist piece of gauze, were not greatly injured by exposure of thirty to forty-five minutes to a current of ozonized air. The second experiment was to pass the ozonized air into the test tubes containing a watery suspension of the staphylococci. The air was passed into the mixture for five, ten, and fifteen minutes. The cloudy fluid was seen to quickly become clearer under the action of the ozone. Cultures were absolutely sterile. The result, therefore, showed that in the shortest trial (five minutes) all the staphylococci were killed by the action of the ozonized air dissolved by the fluid.

Still later than this report is a meagre one by d'Arsonval on The Production of Concentrated Ozone and on its Bactericidal Effects, contained in the *Comp. rend. hebd. des séances de la Soc. de biologie*, July 5, 1895. The writer was not enthusiastic about his results, having passed highly concentrated ozone through cultures of diphtheria bacilli, typhoid bacilli, etc., for nearly half an hour without sterilization. He fails to state the concentration of his ozone, its rate of passage through the cultures, the age of his cultures, and the character of his culture media. His article ends with this suggestive sentence: "Perhaps it is necessary to experiment under conditions in which the contact between the bacteria and the ozone is closer than in simply bubbling the ozone through a culture."

My own experiments have been confined to the action of ozone in fluids, for the results of Ohlmüller, Park, and others in treating bacteria with dry ozonized air, as set forth in their reports, offer but little encouragement to follow on that line of investigation.

The Ozone Company of New York and Chicago, at whose laboratory my first experiments were conducted, furnished me with an unlimited supply of ozone. This, in concentration of 15·84 milligrammes to the litre of air, was bubbled at the rate of one litre a minute for two, four, and seven minutes through test tubes containing five cubic centimetres of twenty-four-hours-old cultures of the diphtheria bacillus, the typhoid bacillus, the cholera spirillum, and the golden staphylococcus in beef-peptone bouillon. Removes were at once made from the cultures so treated to sterile bouillon, which was then placed in an incubator at 37° C. for eighteen hours. At the end of this time all the removes were growing, proving that a hundred and ten milligrammes of ozone had failed to entirely destroy the bacteria in any of the cultures. At a later date I repeated the experiment with the typhoid bacillus and the bacillus of anthrax, treating the latter with a hundred and fifty-eight milligrammes of ozone, but failed to destroy either organism. Next, a drop each from twenty-four-hour beef-peptone bouillon cultures of various bacteria was suspended in five cubic centimetres of sterilized water and treated with ozone of the same concentration (15·84 milligrammes to the litre), fed at the rate of one litre a minute. In this manner the anthrax bacillus with spores was destroyed in fifteen minutes (ozone, two hundred and thirty seven milligrammes), and the diphtheria bacillus, the typhoid bacillus, and cholera spirillum in two minutes (ozone, thirty-one milligrammes). Comparing the bouillon with the sterilized water experiments, the results may at first glance seem incompatible to those unfamiliar with bacteriological methods, but are easily explained by the fact that the bouillon cultures contained a vastly greater number of organisms than the water, and that much of the oxidizing force of the disinfectant was spent on the organic matter contained in the bouillon. We have, then, obviously in watery suspensions conditions in which a closer contact is possible between ozone and bacteria than can be effected in dry or moist air, and yet water is but a poor medium for the solution of ozone, as it holds in its natural state but a half volume per cent., and about three volumes per cent. on the addition of a small amount of phosphate and hypophosphite of sodium. In oils, however, we have more promise of an ideal medium for the solution of ozone, as it has long been recognized that they absorb it in large volume and part with it very slowly. Dr. Morton is authority for the statement that the combination is not an oxidation, but that the ozone is taken up by the oil as O_3 and yielded up as O_3. The Ozone Company has utilized this fact in a preparation bearing the proprietary name "therapol," which consists simply of a solution of ozone in sweet almond or olive oil. Professor R. A. Witthaus, after a qualitative and quantitative analysis of therapol, reported that it contained about eight volumes per cent. ozone. The following experiments, conducted by myself at the Hoagland Laboratory, demonstrate that it possesses considerable antiseptic power.

The organisms used in the tests were the golden staphylococcus, the typhoid bacillus, obtained from a virulent case during the recent epidemic at New Haven, the cholera spirillum from a Swinburne Island case of two years ago, and the diphtheria bacillus, very virulent, one twentieth of a cubic centimetre of bouillon culture killing a medium-sized guinea-pig in twelve hours. The therapol used was bought in open market, and some of the bottles stood on my desk six weeks before being uncorked for use. Following the methods of Koch, pieces of silk thread, half an inch long, were sterilized by heat and soaked for a few minutes in twenty-four-hour cultures of the above-named bacteria. After drying they were immersed in tubes containing fifteen cubic centimetres therapol and left there for varying lengths of time. After removal they were passed between sheets of sterile filter paper till no traces of oil remained, and were then dropped into tubes of sterile bouillon and left at 37° C. for several days. At the same time controls were made from infected threads untreated with the ozonized oil. The tubes of bouillon containing the controls became cloudy in from twelve to forty-eight hours, the others remaining clear. On examination the control growths proved to be pure cultures of the various bacteria used in the experiment. To avoid error, the tests were repeated several times with the following summary of results: Golden staphylococcus destroyed in from ten to thirty minutes; typhoid bacillus in ten minutes; diphtheria bacillus in twenty to thirty minutes; cholera spirillum in one minute. These results led me to infer that we had in therapol an agent of very considerable value as a practical antiseptic, an agent capable by virtue of its oily and permeating qualities of reaching the bacteria of surgical diseases, of destroying them or arresting their growth, and of accomplishing this result with a minimum amount of irritation to the tissues involved. I have put this inference to test by practical use of therapol in the surgical clinic of the Outdoor Department of the Long Island College Hospital with results of sufficient interest to note. The following cases are given, not because they possess any peculiar interest as surgical cases, and not because the reconstructive process took place with remarkable rapidity, but on account of their obstinacy to the ordinary accepted methods of antiseptic and stimulative treatment and their prompt reaction to therapol. Many ordinary cases of suppuration, ulcers, etc., were obviously benefited by the application, but as no other antiseptic had ever been tried they were not deemed worthy of note.

Henry M., forty-five years old, chronic drunkard. Has old suppurating wound of scalp with extensive undermining of same. Treated from May 8th to June 5th by irrigation with various antiseptics, among them carbolic acid, two and a half per cent., and bichloride of mercury, 1 to 500, and by drainage. Slight improvement in discharge. On June 5th began to inject the pockets of the wound with therapol after irrigation with a two-and-a-half-per-cent. carbolic-acid solution, and to pack with gauze saturated with therapol. At the following visit there was marked diminution in the discharge, healing from the bottom progressed rapidly, and on June 14th, after which date the patient failed to appear for treatment, the wound was almost healed. During his attendance at the dispensary the patient allowed from two to four days to elapse between dressings.

John P., forty-seven years old, often drunk during treatment. Large crescentic contused wound of forehead (three inches on curve) suppurating profusely. From May 1st to June 14th treated at various intervals with the antiseptics mentioned above, and for a time with iodoform. Improvement was slow and unsatisfactory. From June 14th to 19th the wound was injected with therapol and dressed with therapol gauze. Suppuration diminished at once and granulation progressed rapidly. On the 19th, the last visit, there was only a small sinus at the lowest point of the wound.

James M., forty-five years old. Old wound of arm, the result of a compound fracture, about an inch in diameter and covered with unhealthy granulations. These were clipped off and a balsam-of-Peru dressing applied. At the end of a week there was but little improvement and the wound was stimulated with nitrate of silver, solid stick, and dressed with zinc ointment. Later, carbolized dressings were applied. Improvement very slow. After two weeks the wound was covered with gauze saturated with therapol, and this dressing covered with oiled silk. In two days, when the dressing was removed, a healthy cicatrix had formed over the surface of the wound.

Maggie H., thirty-five years old. Decidedly unclean in person and irregular in attendance, from one to six days elapsing between her visits. Had several varicose ulcers on both legs extending from ankles to knees, fœtid, and of many weeks' duration. Dressed at irregular intervals from April 5th to May 10th with therapol under oiled silk and supported by bandaging. On May 10th all ulcers had cicatrized and the patient was discharged.

Mrs. K., eighty years old. Extensive varicose ulcers of both legs, fœtid and painful. Dressed with therapol under oiled muslin three times a week from June 12th to June 21st, when the ulcers were all cicatrized and the patient was discharged.

Charles J., forty years old. Deep ulcer of leg (an inch by an inch and a half) has persisted at intervals for seven years, and has not healed for one year in spite of support and antiseptic treatment. Very irritable and painful. On July 12th began to apply therapol under oiled muslin. On July 19th, granulations on a level with the edge of the ulcer. On July 22d patient complained of pain after applying therapol, and from this time on these dressings were alternated with zinc-ointment dressings to avoid overstimulation. On August 10th the ulcer was practically healed, only a small point remaining for the cicatrix to cover, and the patient was discharged.

I can not recall any other patient treated similarly who complained of pain after application of the therapol.

Several cases of burns of various degrees of severity were treated in my clinic with therapol applications under oiled muslin with promise of good results, but with the customary irregularity of dispensary patients they failed to attend long enough to make a full report of results possible. I believe that we possess in therapol an agent which may often be used with peculiar benefit as an antiseptic dressing for burns, especially where the safety of using carbolized dressings is questionable, as where an extensive skin surface is involved or the patient is a child. Both my bacteriological and clinical observations on the action of this preparation have been so satisfactory that I have felt fully justified in offering these notes to the profession, and in continuing experiments on the same line.

185 JORALEMON STREET.

A Portrait of Mr. Treves.—"Mr. Treves, the well-known surgeon of the London Hospital, prolonged the life of one of his lady patients by a successful operation. When eventually the lady died, a clause was found in her will to the effect that a sum of money, equal to the highest fee, was to be paid to the painter of the well-known picture 'The Doctor' for a portrait of Mr. Treves in his robes, which portrait was to have a permanent place on the walls of the London Hospital. Mr. Luke Fildes, 'The Doctor' painter, has already started on his work, and had his first sitting with the surgeon in the operating theatre of the hospital, not brush in hand, but by making mental notes of his subject at work."—*British and Colonial Druggist.*

THE CIGARETTE HABIT.*

BY J. C. MULHALL, M. D.,
ST. LOUIS.

As a member of this and the Climatological Association, and as one who has smoked cigarettes for twenty-five years, I feel that I may speak with a certain amount of authority on this subject. "You, a throat doctor, and smoke cigarettes!" is a phrase that has finally wearied my ears; and, bubbling with mild wrath, "I rise to explain."

The pleasure and the penalty of this vice have never been rationally described, to my knowledge, other than by myself. This I did in a paper published in the *St. Louis Courier of Medicine* some eight years ago, and so little notice was given it that what I now say will be practically new.

A word as to the tobacco habit in general. Mankind pursues various methods in using it: by chewing it, by dipping, by cigar or pipe, by snuffing, and by cigarettes. There is a reason why each one pursues a particular plan. Early associations have much to do with the selection of the plan; but, apart from this, each method has its own particular pleasure. The man who both chews and smokes derives a different kind of satisfaction from each method, and he would derive a still different kind did he take snuff. Cigarette smokers may be divided into those who inhale the smoke and those who do not. The latter class is a very small one and the pleasure is the same, in a milder degree, as that of the cigar and pipe smoker, wherein the smoke chamber is the mouth. But all real devotees of the cigarette inhale. That is, with a quick inspiratory act, the smoke is drawn through the larynx into the trachea and, so far as I have been able by different experiments to learn, into the first division of the bronchial tubes; not, as the public believes, into the lungs proper. These inspirations are nearly always superficial, and the fact alone that there is a tidal and residual air would teach that the smoke does not reach beyond the bronchial tubes. Inhalation explains the pleasure of cigarette smoking. If the cigarette smoker did not *feel* the smoke in his larynx and windpipe, his pleasure would be gone. Every old cigarette inhaler will tell you this fact: that if he perchance smokes a brand of cigarette very much milder than that to which he has been accustomed, he will at once reject it, simply for the reason that larynx and trachea have been accustomed to a certain degree of irritation. The larynx and trachea have, so to speak, acquired a habit which rejects any unusual departure. For the same reason the inhaler rejects a brand of cigarettes much stronger than that to which he is accustomed, nor will he inhale the smoke of a cigar—vastly more irritating than that of any cigarette. The inhaler may change his cigarette for one more pleasing to his sense of flavor, provided always, however, that it satisfies his accustomed degree of laryngeal and tracheal irritation.

The pleasure in cigarette smoking, therefore, as compared with other tobacco habits, may be said to be a pleasurable irritation of the laryngeal and tracheal sensory branches of the pneumogastric nerve.

Another question frequently hurled at me in all these years has been, "What satisfaction can you get out of those weak little things?" The question means nicotine satisfaction. I once more rise to explain.

One absorbs nicotine in accordance with the amount of absorbent surface in contact with the column of smoke. In ordinary smoking the mouth alone is the smoke chamber; but when one inhales, one must add to the mouth the mucous membrane of the larynx, windpipe, and larger bronchi. There is, hence, roughly speaking, three times as much surface for the absorption of nicotine; and consequently, though a cigar contains vastly more nicotine, three fourths of it is wasted, so far as the question of nicotine intoxication is concerned, as compared with the cigarette. Moreover, the cigarette smoker consumes two or three while the cigar smoker consumes one. The puny cigarette is, therefore, not so weak as it appears, and with this explanation begins to appear worthy of the newspaper term "deadly." Again, the cigar smoker, as compared with the cigarette smoker, is an infrequent consumer. We know that, with most drugs, if we divide an ordinary dose into ten equal parts and give one part every ten minutes until the ten parts are taken, we get a more powerful effect than if the whole were given at one dose. So it is with cigarettes. The dose of nicotine is smaller, but the doses are much more frequently repeated. I can smoke one large, strong cigar in the ordinary manner without evidence of nicotine intoxication, but I can not smoke three cigarettes inhaled, in succession, without nausea or vertigo or a rapid pulse.

The evil effects of cigarette smoking may be divided into the local and constitutional. As compared with other tobacco habits, if the cigarette were composed of other ingredients than tobacco and paper, we should, as clinicians, be prepared to look for different signs and symptoms. So far as the constitutional effects are concerned, I wish to state, as one who has carefully watched this question for fifteen years, that they are absolutely the same as those of tobacco used in any other form. The evil symptoms are always those of nicotine poisoning—not those of any other drug. The only chemist of high standing who, to my knowledge, has analyzed cigarettes is Dr. Ledaux, who last winter presented to the Section in Jurisprudence of the New York Academy of Medicine a report of the analysis of several popular brands of cigarettes. The dealers from whom he obtained the samples expressed their hope to him that he might find all kinds of narcotics in them. They explained that handling them was a nuisance to them; that all the profit accrued to the cigarette trust. He found absolutely no evidence of any other drug but nicotine in the tobacco, and in the paper a harmless quantity of cellulose.

The W. C. T. U. has endeavored to crush the cigarette evil by asserting that opium, *cannabis indica*, and other narcotics were present in cigarettes. Vice can not be cured by misrepresentation. The only narcotic present is nicotine, and this is an evil or not according to a great many different circumstances. That chief circumstance when, without exception, it is always productive of great harm, is youth. Every medical man will admit, theoretically, that this should be a fact, and the few who, like myself, have made practical observations will tell you that they never saw a child (I mean by this term those who have not reached puberty) who used tobacco habitually whose health was not in some manner badly impaired. What else would one expect the tender, growing nervous organism to do but wilt under the steady daily influence of a drug like nicotine? In adolescence—and practically this may be said to be from puberty until eighteen in females and twenty-one in males—the evil is not so great, but is still a great one; for, though the nervous crisis of puberty has been passed, the nervous system is still rapidly developing. The nerves are more resistant than in childhood, but, on the other hand, greater demands are correspondingly made upon them, either by the higher phases of education in one class or by the actual daily struggle for existence in the other. That the use of tobacco is a serious handicap in adolescence is proved by the investigations of others than myself. At several of our great universities it has been found by exact and scientific investigation that the percentage of winners in intellectual and athletic contests is considerably higher in the total abstainers from tobacco. Sammy, the best known newsboy of St. Louis, who by his wit and energy at the age of fourteen has accumulated quite a bank account, at my instigation made a series of unbiased observations concerning the newsboys of St. Louis. He found, other things being equal, that the selling capacity of the boy who used no tobacco was much greater than that of the boy who used tobacco either by chewing or by smoking.

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* Read before the American Laryngological Association at its seventeenth annual congress.

It being admitted that the use of tobacco is a great evil in the young, it follows as a self-evident proposition that any method which encourages its use must be more reprehensible than a method which discourages its use, and the cigarette above all other methods presents this encouragement to the use of tobacco. In its mildness is concealed its very capacity for doing harm, for the reason that it teaches the use of tobacco. Every one knows the picture by Brown of a newsboy clinging to a lamp-post, limp, pallid, and vomiting, entitled "His First Cigar." Had it been his first cigarette the picture would not have been true to Nature, for, unfortunately for our growing youth, the first cigarette does not induce this deathly nausea. Were this only the case there would be but one cigarette smoker in youth where there are now a hundred. The boy at first uses only the mouth as a smoke chamber, and as a cigarette is so mild he absorbs but a minute quantity of nicotine, insufficient for nausea. He gradually becomes able to consume more cigarettes, and quickly acquires nicotine tolerance. He is not allowed to pursue this method long. Invariably some other boy teaches him to inhale. At first it causes violent cough and many would never repeat the attempt, but the taunts of the other boy are heard, and with the bravado of boyhood he perseveres. The larynx and windpipe soon tolerate the smoke, then demand it, and the boy is a full-fledged cigarette fiend.

The mildness of the cigarette explains also its fast-spreading use among young women, especially the leisure-class young ladies. As a rule they do not inhale, for at the first attempt the violent cough ensuing quenches ambition in this direction, and, unlike the youth or the boy, she is seldom encouraged to persevere. The fear of a tobacco-tainted breath also curbs her habit. In young ladies who smoke cigarettes very moderately and who do not inhale I have never seen evidences of nicotine poisoning. Their immoderate use, even without inhalation, may, of course, afford sufficient nicotine to disturb the health. Apart from this, however, I join hands with the ladies of the W. C. T. U., who in New England have established anti-cigarette leagues among young ladies reformed of the habit, because of the pernicious example these young ladies may set to the youth and childhood which surround them.

Personally I may add that when I am appealed to on the same ground I freely admit the force of the argument. I, however, do not pose as a reformer or advocate, only as an expert.

The great evil of tobacco is its constitutional effect on the nervous system. The much lesser evil is local—namely, on the upper respiratory organs. My experience, like that of Morell Mackenzie, is that, provided there is no other factor, the use of tobacco provokes little or no disturbance to these organs. That it may aggravate a throat or nose trouble occasioned by other causes I will admit, or that by its constitutional depressing effect it may aggravate such trouble I will also admit; but, excluding all other causes and looking at tobacco purely in respect of its local effect, I must deny that it ever causes, as ordinarily used, throat disease worthy of the name. There are a few exceptions as there are to all laws in medicine. There are idiosyncrasies in regard to the use of tobacco, both with reference to the throat and the nervous system. They are rare. Tobacco, in its ordinary use, at most produces a slight hyperæmia or insignificant catarrh in the healthy throat. As used in cigarettes—that is, by inhalation—the smoke comes in contact with the laryngeal, tracheal, and bronchial mucous membrane, and here produces in many the same trivial hyperæmia and secretion. This latter is pearly and is ejected with a single gentle cough. I am unaware that I have this slight cough unless reminded by others. I have occasionally heard whistling râles in the bronchi of those who inhale very deeply and are immoderate smokers. Hyperæmia, not inflammation acute or chronic, is the sole disturbance. The effects in the larynx of the ordinary healthy man seem almost nil. Mario, the great tenor, inhaled cigarette smoke between the acts. I experience no vocal difficulty in delivering lectures. Maxwell, the murderer of Preller, was confined in the St. Louis jail for two years, during which time he inhaled an average of forty cigarettes a day. I secured the larynx and trachea of Maxwell, but could discover no evidence of morbid change other than a fracture of the hyoid bone caused by the hangman's rope.

Twenty years ago in this country this habit existed, but was unusual, probably because each consumer was compelled to make his own cigarettes. But since the American manufacturer with his advertising genius has scattered them over this country, ready made and very cheap, the habit has grown enormously. Nervous diseases and insanity are rapidly increasing in the American people we are assured by our own neurologists. Our nation was already noted as furnishing proportionately more neurasthenics than any other. If to such an inheritance American youth then adds the nerve-destroying nicotine habit which the cigarette so materially assists in spreading, there is grave reason to hope that the cry of reform may be echoed and re echoed throughout our glorious country. There is no such instructor of the public as the press, and I trust that our newspapers will publish broadcast such information as this and kindred essays may give them on what is fast becoming a national vice in American youth—the cigarette habit.

ALIMENTATION OF THE SICK.

By GEORGE TAYLOR STEWART, A. M., M. D.,
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No fact is better established at the present day than that beef extracts, beef tea, and soups, while possessed of slight stimulating qualities, are devoid of nourishing and strengthening properties. It has been found that the only food substance extracted from meat by boiling is gelatin, and that this is present in beef tea in such small amount as to be of no value for nutritive purposes. The creatine and creatinine also existing in beef extracts in minute quantity, and to which much importance was formerly attributed as sources of muscular energy, have now been shown to be practically incapable of yielding kinetic force.

In the alimentation of the sick a very subordinate position must therefore be assigned to these products, and it is a well-established fact that in order to support the nutrition in disease recourse must be had to the albumins, or nutritive elements of meat. Inasmuch as pure albumin is not readily digested and assimilated in diseased conditions, in which the digestion is usually more or less impaired, it was supposed that these objections might be overcome by administering the products of artificial digestion of meat—the peptones. This, however, has not been proved to be the case.

During late years some physiological chemists have expressed themselves decidedly against the employment of peptones as foods for the sick. It is claimed by them that these peptones exert an irritant effect upon the digestive tract, which is evidenced by indigestion and diarrhœa, and particularly that they do not possess the capacity of replacing the albuminous elements of the tissues; in other words, that they can not make good the tissue waste in disease. This would seem to be a serious objection to the use of pure peptones, which should therefore be eliminated as completely as possible from nitrogenous food products. Goldmann has shown that any food preparation which contains peptones in excess requires the addition of aromatics or beef extracts to conceal the disagreeable, bitter taste of these substances.

On the other hand, it has been demonstrated that the albumoses which represent an intermediary stage in digestion between albumins and peptones are free from the disadvantages of the latter. It is in the form of albumoses that physiologists tell us that albuminous foods are most rapidly and completely absorbed and assimilated, and are best adapted to maintain the nutrition in disease. Hence it will be readily understood that an effective nitrogenous food product is one that contains the least possible quantity of peptones and the greatest possible amount of the desirable albumoses.

Some time ago a food preparation was brought to my attention which conforms to these essentials, and possesses other features which render it worthy of thorough trial in medical practice. This preparation, which is known under the name of somatose, is furnished in the form of a yellowish powder, readily soluble in all ordinary menstrua, and practically devoid of taste and odor. According to accurate analysis made by Professor Chittenden, of Yale College, somatose is composed chiefly of albumoses free from undesirable by-products, and consequently is unlikely to give rise to systemic disturbances. It also contains the so-called nutritive salts of meat, but only a trace of peptones. During an extended trial with this preparation in hospital and private practice, I have always found that it was well relished by patients of any age, and that it never excited gastric distress, nausea, or vomiting, and never provoked diarrhœa. Its ready solubility enabled me to administer it in a variety of fluids, and its freedom from disagreeable taste permitted its use in patients who refused all other food preparations. The last is a point of no little value, since persons suffering from acute diseases, and especially acute gastro-intestinal disorders, often manifest a strong repugnance to beef preparations, while somatose can be given them in coffee, tea, or milk without their knowing it. Somatose is also well adapted for rectal feeding in the form of solutions, to which a small amount of table salt should be added.

Before reporting the histories of a few characteristic cases in which I employed somatose with extreme satisfaction, it may not be out of place to describe briefly some of the main uses of this preparation. As might be expected, from its freedom from irritating effects on the stomach and intestinal canal, somatose has been considerably utilized in acute and chronic affections of the gastro-intestinal tract. Professor Bartley, of Brooklyn (*Medical and Surgical Reporter*), has reported a number of cases of cancer of the stomach, gastric ulcer, and choleraic diarrhœa in infants in which this food was well borne and retained when all other food was rejected. He mentions especially its property of stimulating the appetite and rapidly increasing the general nutrition. Some experiments made in Professor Riegel's clinic also demonstrates that somatose is superior to other albuminous preparations in certain diseases of the stomach, such as cancer, ulcer, or gastric dilatation. Drews, of Hamburg, has especially called attention to the value of somatose in cases of cholera infantum and acute gastric catarrh, with vomiting, in infants. In several patients with chronic gastritis this food not only alleviated the pain, but stimulated the appetite, regulated the bowels, and rapidly improved the general health. This author cites a very striking case of dilatation of the stomach due to pyloric stenosis and attended with marked vomiting. After several days' administration of somatose the vomiting ceased and a rapid improvement occurred in the motor functions of the stomach. Cases of gastralgia are also cited by Drews, Scherck, and others in which favorable results followed the use of this food preparation.

By reason of its ready assimilability and high nutritive value somatose is peculiarly adapted for the treatment of such acute diseases as typhoid fever, exanthemata, pneumonia, etc. Some time ago Dr. Frank Woodbury, of Philadelphia, reported a number of experiments with somatose in typhoid fever in the Medico-chirurgical Hospital. He found that the patients greatly relished the preparation, that it quickly relieved the gastric irritability, and that it seemed to accelerate recovery. Dr. A. K. Hills, of New York (to whom I am indebted for suggesting the use of this food in a case in my own family, where it was instrumental in saving my child's life), has also found it very serviceable in the treatment of pneumonia, while Professor Witzel, of Bonn, and Dr. De Buck, of Ghent, warmly recommend its use during the stage of convalescence from severe surgical operations.

It is, however, in chronic diseases attended with marked exhaustion and loss of flesh that somatose is destined to occupy a prominent place. The fact that it can be administered for prolonged periods without cloying upon the appetite or producing a gastric irritation is greatly in its favor, while its property of stimulating the appetite gives it a unique position among food products. In the treatment of pulmonary phthisis, chlorosis, anæmia, and cachexias of various kinds, especially those due to cancerous or specific trouble, somatose has proved of great service, as is shown by numerous reports.

For the feeding of infants, both in health and in disease, German authorities have recently recommended the addition of somatose to cow's milk in order to assimilate it as nearly as possible to mother's milk. The administration of this modified milk has given excellent results in the alimentation of weakly infants who are unable to nurse at the breast, or of children suffering from rickets, scrofula, gastro intestinal disorders, etc.

The following brief reports of cases, taken at random from among a large number, will serve to illustrate the prompt nutritive and stimulating properties of somatose in conditions of great depression of the vital powers and marked malnutrition :

Case I.—Isabella C. Vaginal hysterectomy. For two days the patient received somatose—only a teaspoonful in hot water every three hours. This was retained when milk and other articles of liquid food were vomited.

Case II.—Annie S. Vaginal hysterectomy. For two days the patient received nothing but somatose, a teaspoonful every four hours, dissolved in hot water, and given in small doses at frequent intervals. This was the only article of food that could be retained.

Case III.—Nellie H. Remittent fever. Several times during her illness all articles of food on their mention disgusted the patient, and nothing could induce her to take any. Her nourishment and strength, however, were fairly good. Her thirst was great. Somatose was dissolved in water. She was given the solution from a feeding cup under pretense that it was water. She was unable to tell the difference, and retained nourishment through its use.

Case IV.—Ann O'T. Acute exudative nephritis. For several days the patient was unable to retain any article of food. She was given somatose, a teaspoonful every four hours. In the course of five days the somatose solution was vomited but once.

EMBOLISM OF A BRANCH OF THE CENTRAL ARTERY OF THE RETINA.

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Cases of embolism of a branch of the arteria centralis retinæ are so rarely seen that I feel justified in reporting the following case:

Hans M., aged twenty-nine years, German, a bookkeeper, was brought to me September 12, 1895, at 10 A. M. Two hours before, while at work, he had suddenly become entirely blind in the right eye. Four hours later, with the right eye he could see only the lower half of objects. Patient has worn concave lenses (— 3.) for fifteen years. At the time of my examination vision was as follows: R. E. with $-3 = \frac{15}{100}$; L. E. with $-3 = \frac{15}{30}$. Five years ago patient had a severe attack of rheumatism, involving many articulations and his chest (endocarditis).

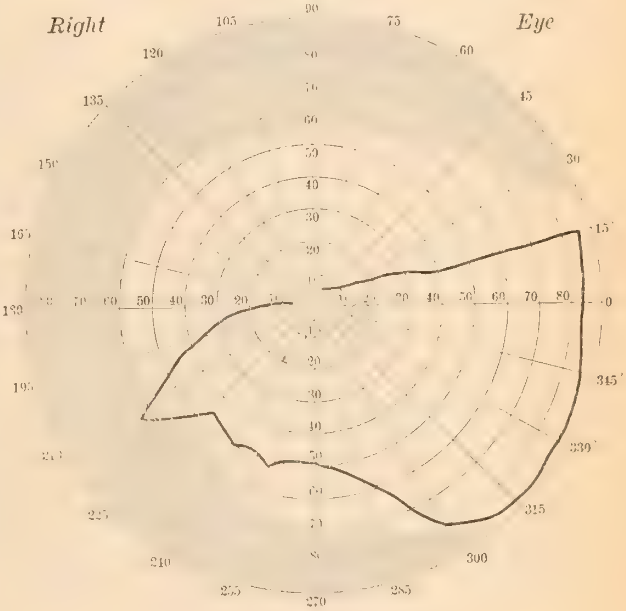

Fig. 1.—Four hours after the attack.

Ophthalmoscopic examination showed nothing unusual in left eye, but in right eye an interesting picture was presented. The lower external part of the retina was bloodless, the line of demarcation between it and the normal retina being well marked. Close examination showed the presence of a plug in the inferior temporal branch of the arteria centralis. Beyond the occlusion, for a distance equal to the diameter of one disc, was a portion of artery which was narrow and void of blood. Toward the peripheral part of the vessel blood was present. The fields of vision are shown in the accompanying diagrams (Fig. 1 and Fig. 2). The patient promised to return, but did not do so until October 6, 1895—twenty-four days after the attack. At this time vision in R. E. = $\frac{15}{50}$. The ophthalmoscope showed that the retina in the affected area had regained its color. The affected vessel was smaller in diameter than normal, but contained blood. The fields of vision were practically of the same extent as when first observed.

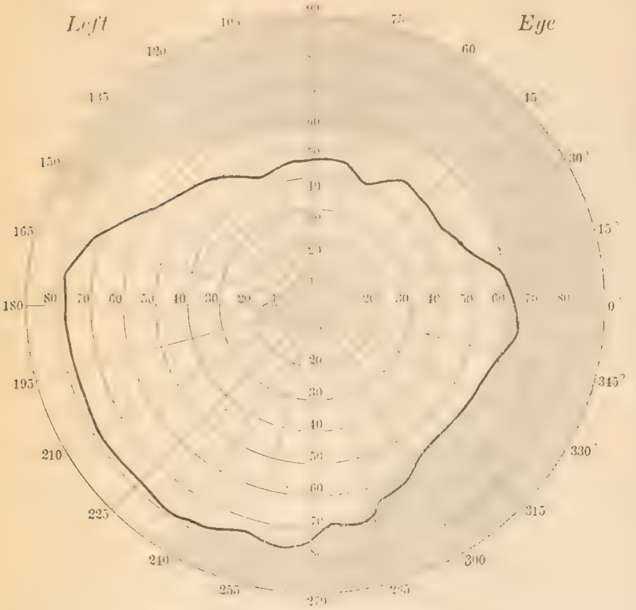

Fig. 2.—Four hours after the attack.

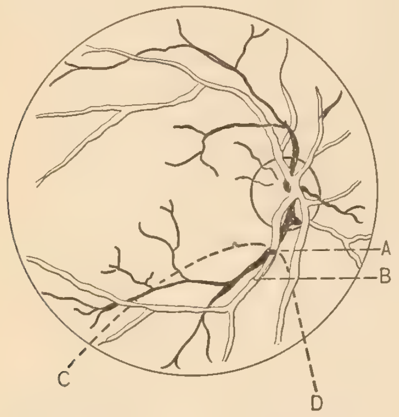

Fig. 3.—Diagram of the fundus in the case of Hans M. A, location of embolus; A B, portion of artery in which blood was absent; C D, pale portion of retina.

From a study of five cases of embolism of a branch of the central artery of the retina, Holden, of New York, concludes that "with a single embolism of a branch of the central retinal artery we may have a field of quite irregular form, which to a considerable extent may be explained by the variation of arterial distribution; and in cases where the lumen of an artery remains blocked we may have a collateral restoration of its circulation by anastomosing vessels" (*Archives of Ophthalmology*, January, 1894).

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THE CIGARETTE HABIT.

In this issue we publish an article on The Cigarette Habit, by Dr. Mulhall, of St. Louis, which he presented as a paper at the recent annual meeting of the American Laryngological Association. Dr. Mulhall's article seems to us to be of exceptional value. Being a cigarette-smoker himself and at the same time a laryngologist, he is peculiarly qualified to speak of the effects of cigarette-smoking, especially upon the upper air-passages when the smoke is inhaled. It is a popular delusion—one that Dr. Mulhall thoroughly disperses—that when the smoke of a cigarette is "inhaled" it pervades the air-vesicles of the lungs and the nicotine it contains is all absorbed into the blood through the delicate respiratory membrane. As a matter of fact, the smoke reaches only to the larger bronchial tubes, probably in the majority of instances not to a point much below the larynx. To the mucous membrane of these large air-passages the smoke does little harm as an irritant, although, as Dr. Mulhall says, it may aggravate pathological conditions already present.

But the surface by which nicotine is absorbed into the blood is much larger than that of the mouth, so that, although relatively only a little of the poison is contained in a cigarette, much more of it finds its way into the system than when the smoke from a cigar or a pipe is simply drawn into the mouth and at once blown out. The inference to be drawn from this is that the inhalation of tobacco smoke is a bad practice. That it is more likely to be indulged in by persons who smoke cigarettes than by those who restrict themselves to cigars and the pipe may readily be conceded. At the same time it is quite certain that many smokers inhale cigar smoke and pipe smoke, at times if not habitually—sometimes they do it involuntarily.

We are particularly glad to see that Dr. Mulhall expresses himself so positively against the common assumption that cigarettes are especially injurious on account of their containing other poisons besides nicotine. So far as the constitutional effects of cigarette-smoking are concerned, he states as the result of fifteen years of careful study of the matter that they are "absolutely the same as those of tobacco used in any other form," and he cites Ledaux, who has subjected various brands of cigarettes to chemical analysis, as having found "absolutely no evidence of any other drug but nicotine in the tobacco, and in the paper a harmless quantity of cellulose." It is, indeed, the height of absurdity to suppose that cigarettes are sophisticated with opium. Opium, as has often been said, is too expensive to be used for such a purpose. While we believe that cigarette-smoking by the young should be discouraged, as well as the inhalation of tobacco smoke by smokers of any age, we can not admit that cigarettes are, in themselves, especially injurious.

THE *MEDICAL AND SURGICAL HISTORY OF THE WAR OF THE REBELLION.*

Some of the volumes of the *Medical and Surgical History of the War of the Rebellion*, if not all that have appeared, seem to have been out of print for some time. At all events, we understand that they have been difficult to obtain. We hope, therefore, that the Indiana State Medical Society, aided as it ought to be by other influential medical bodies, will succeed in inducing Congress to provide for a revised edition of the work. We presume that the credit of initiating this praiseworthy movement is to be accorded to Dr. Stephen J. Young, of Terre Haute, for the president of the Vigo County Medical Society, before which it was first brought forward, appointed Dr. Young the chairman of a special committee to draft resolutions to be presented before the State society. The other members of the committee were Dr. John E. Link and Dr. A. W. Spain. The preambles and resolution that these gentlemen drafted were as follows:

"*Whereas*, We believe a demand exists for a revised edition of *The Medical and Surgical History of the War of the Rebellion*, and especially so among the younger members of the profession; and

"*Whereas*, We believe the science and art of medicine and surgery would be materially benefited by preserving in suitable form the knowledge thus acquired from the practical field of experience;

"*Therefore*, We desire to submit the resolution to this society, with the recommendation that the president appoint a committee, to consist of as many members as he deems advisable, to properly bring the matter before the next Congress."

The State society adopted the resolution, and the president appointed Dr. Young, Dr. Miles F. Porter, of Fort Wayne, Dr. G. W. H. Kemper, of Muncie, Dr. J. B. Greene, of Mishawaka, and Dr. W. H. Wishard, of Indianapolis, a committee to bring the matter to the attention of the medical profession throughout the country, in order that Congress may be made to understand the importance of the measure. Dr. E. L. Larkins, the president of the Vigo County Medical Society, has sent us a copy of the circular that the committee has prepared. He also informs us that the plan has been indorsed by a majority of the county medical societies in Indiana, and that not one of them has dissented. In the circular Dr. Young truly says that this great work should be within the reach of every member of the profession. The proposal to have a new edition of it issued seems to us one that should be earnestly favored by every physician in the country, and we hope that Congress will be inclined to take the necessary action for carrying it out.

MINOR PARAGRAPHS.

THE *INDEX MEDICUS.*

We are very glad to be able to announce that enough subscriptions have been obtained to insure the resumption of the publication of the *Index* and the future permanency of its issue. We learn that the editors propose to restrict its circulation to "a close club confined to the original subscribers." We hope they will include everybody who subscribes for the sake of aiding in reviving the work. Since we last went to press we have received a letter from Dr. A. C. Getchell, the librarian of the Worcester District, Mass., Medical Library, in which he asks us to include that library among the subscribers. Dr. Getchell adds: "I am also authorized by Dr. H. M. Quimby, superintendent of the Worcester Lunatic Hospital, to ask you to add that institution to the list." We congratulate the editors and the publisher of the *Index Medicus* on the success that has been achieved. *Resuscitatus est Index Medicus.*

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 26, 1895:

DISEASES.	Week ending Nov. 19.		Week ending Nov. 26.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	33	6	23	3
Scarlet fever	63	3	72	1
Cerebro-spinal meningitis	1	2	1	1
Measles	157	9	186	11
Diphtheria	225	23	182	25
Small-pox	1	0	0	0
Tuberculosis	0	0	115	106
Leprosy	0	0	1	0

St. Joseph's Hospital.—Dr. John Dorning has been appointed a consulting physician.

The Michael Reese Hospital, Chicago.—Dr. John Ridlon has been appointed orthopædic surgeon to the hospital.

A Correction.—In Dr. Farlow's article on Removal of the Tonsils, published in the *Journal* for November 9th, in the sentence "In children, without anæsthesia, when adenoid operation is to follow," etc., on page 593, a *no* should have been inserted, making it read "where *no* adenoid operation is to follow."

Changes of Address.—Dr. A. S. Bird, to No. 115 East Fortieth Street, New York; Dr. Harvey B. Cronk, to No. 68 Madison Avenue, New York.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 10 to November 23, 1895:*

Corson, Joseph K., Major and Surgeon. The leave of absence granted him is extended twenty days on surgeon's certificate of disability.

Crampton, Louis W., Major and Surgeon, is granted leave of absence for three months, to take effect on or about December 1, 1895.

McCreery, George, Captain and Assistant Surgeon, is granted leave of absence for four months, to take effect about December 10, 1895.

Rand, Irving Wallace, First Lieutenant and Assistant Surgeon, will report in person without delay to the president of the Army Medical School for the course of instruction prescribed in general orders, No. 78, September 22, 1893, from the Adjutant General's office.

Swift, Eugene L., Captain and Assistant Surgeon. The leave of absence granted him is extended one month, and he is authorized to go beyond sea.

Appointments.

Fauntleroy, Powell Conrad, Kirkpatrick, Thomas Jellis, Jr., Rand, Irving Wallace, and Stone, John Hamilton, are appointed Assistant Surgeons, with the rank of First Lieutenant, to rank as such from November 6, 1895, and ordered to report to the president of the Army Medical School for instruction.

Promotions.

Appel, Daniel M., Captain and Assistant Surgeon, to be Surgeon with the rank of Major, November 15, 1895.

Brown, Justus M., Major and Surgeon, to be Deputy Surgeon General with the rank of Lieutenant Colonel, November 15, 1895.

Retirements.

Gibson, Joseph R., Lieutenant Colonel and Deputy Surgeon General, retired from active service November 15, 1895, on account of disability incident to the service.

Society Meetings for the Coming Week:

Monday, *December 2d:* New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; New York Medico-surgical Society; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society.

Tuesday, *December 3d:* Indian Territory Medical Association (first day—Eufaula); New York Obstetrical Society; New York Neurological Society; Buffalo Medical and Surgical Association; Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Herkimer (semi-annual—Herkimer) and Saratoga (Ballston Spa), N. Y.; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *December 4th:* Indian Territory Medical Association (second day); New York Academy of Medicine (Section in Public Health); Society of Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *December 5th:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Brooklyn Surgical Society; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Cuyahoga, O., County Medical Society.

Friday, *December 6th:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *December 7th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Births, Marriages, and Deaths

Married.

Fetterolf—Terry.—In Brooklyn, on Tuesday, November 19th, Mr. Andrew C. Fetterolf and Miss Lella Monica de la Mesa, daughter of Dr. Charles Terry.

Flint—Wing.—In New York, on Wednesday, November 27th, Dr. Austin Flint, Jr., and Miss Marion Wing.

Jones—Aldrich.—In Baton Rouge, La., on Monday, November 18th, Dr. R. R. Jones and Miss Lucia Aldrich.

Nickerson—Waite.—In Canton, Me., on Wednesday, October 23d, Dr. Harry Melville Nickerson, of Portland, Me., and Miss Ella May Waite.

Died.

Porcher.—In Charleston, S. C., on Tuesday, November 19th, Dr. Francis Peyre Porcher, aged seventy years.

Letters to the Editor.

CARBONIC-ACID INFLATION OF THE RECTUM IN WHOOPING-COUGH.

336 East Fifteenth Street, New York, *November 11, 1895.*

To the Editor of the New York Medical Journal:

Sir: Under the heading Practical Notes there is given in the initial number of *Pædiatrics* a prescription for a bromoform mixture against whooping-cough, which identical prescription can be found in the *Deutsche med. Wochenschrift*, 1889, 31. With much *naïveté* it reads in the new periodical named: "Herbert B. Carpenter believes that bromoform gives better results than any other treatment for this dangerous and distressing disease." Since I myself have spoken in your journal of a remedy—the inflation of the rectum by carbonic acid *—which, according to my experience, gives the best results, I beg you to permit me to give an extract from a paper by Dr. Raphael Hirsch, of Hanover, Germany, entitled Der gegenwärtige Stand der Keuchhustenbehandlung,† together with a few remarks of my own, which will show how the much-vaunted bromoform compares with other remedies. I wish to state at the same time that I was impressed with the superiority of the carbonic-acid treatment only after having been familiar with many other whooping-cough remedies—not only those described by Dr. Hirsch.

The remedies against whooping-cough are not lacking in quantity but in quality. Many things have been tried and very few have proved—at least to any extent—serviceable. This deplorable fact will probably exist as long as we do not know the real nature of the disease.

In view of all this, I wish again to call attention to the remedy which was first introduced by Bergeon in 1887, and which, as it seems, has not received the appreciation it so much merits. It was not even mentioned by Hirsch in his above-named article.

It is true, most physicians are convinced that whooping-cough is an infectious disease; nevertheless the conclusive evidence of this presumption has not been produced. The

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* Therapeutic Effects of Carbonic Acid in Dysentery, in the Vomiting of Pregnancy, in Whooping-cough, etc. *New York Medical Journal*, March 9, 1895.

† *Deutsche med. Wochenschrift*, 1893, 19 to 23.

Bacillus tussis convulsivæ has not been demonstrated as yet. Even if we ask for the seat of the disease the opinions of different investigators are divergent. Some speak of general, some of topical infection; of the latter, some say that the whole respiratory tract is affected, others that the affection is confined to the larynx, still others to the mucous membranes of the nose. The latter consider the cough as a reflex neurosis. Corresponding with the difference of opinion in regard to the seat of the disease, there also exist, naturally enough, different opinions in regard to the points to be attacked by treatment.

Since whooping-cough has been looked upon as an infectious disease, the advice of change of residence and climate for the patient should be condemned from a moral point of view, because by such transfer of patients an epidemic may be started in a place that had been free from the invasion of the disease. For the sake of prophylaxis, children with whooping-cough have to be excluded from school, kindergarten, and public nursery.

There exists no specific remedy. According to the theory either of its being a local or of its being a general affection, remedies of topical or of general effect have been tried to produce a specific control.

The oldest topical treatment consisted in inhalations. Empirically it had been established, long before the infectious nature of the disease was more generally recognized, that the patients would be benefited, that the course of the disease would be shortened if they were surrounded by fresh, pure air. To-day fresh, pure air is the first demand in the regimen for whooping-cough patients. In general, moist air is preferred; some, however, speak for warm, dry air. The sleeping room should be well aired, floor and bedsteads washed with carbolic solution, and the sleeping room itself regularly changed. Sulphur fumigations in the morning, as soon as the patient has left the sleeping room, followed by airing until evening, and sulphur fumigations of the dwelling room during the night, while the child occupies the disinfected and aired sleeping room, are well known; this rational measure, I suppose, is recommended by every practitioner wherever it can conveniently be carried out.

It is unnecessary to dwell here on the sojourn of the patients in a gas-house atmosphere. I believe it is generally understood that this atmosphere offers no advantages over the pure outdoor atmosphere. Condensed air in the pneumatic cabinet has been recommended, but has not met with much favor.

Many kinds of inhalations have been advocated. First of all, carbolic acid, either in the shape of a spray of a half- to two-per-cent. solution, or fifteen to twenty drops of the concentrated drug on wadding suspended for from six to eight hours before the mouth of the patient. The former mode has been abandoned on account of the danger of poisoning; the other, because it demanded too much patience and control of will-power from the little patients. Inhalations of salicylic acid and salicylate of sodium were then praised as more harmless and more effective. Other drugs for inhalation were turpentine, quinine, and finally chloroform.

Proceeding from the supposition that the seat of the affection is in the larynx or pharynx, several antiseptics in the shape of swabs or insufflations have had their day. These antiseptics were nitrate of silver, resorcin, quinine, salicylic acid, and salicylate of sodium. The applications in these two shapes did not become popular, on account of the difficulty in overcoming the resistance and the aversion of the little patients toward them.

The application—that is, the insufflation—of quinine, or *pulvis resinæ benzoes*, or *argentum nitricum cum talco*, on the mucous membrane of the nose merits more consideration than all these therapeutic measures here enumerated. It was this means which I preferred to all others before I began to experiment with carbonic acid.

The beneficial effects of the treatment by insufflation on the Schneiderian membrane seem to speak in favor of the theory that whooping-cough is a reflex neurosis the bacillary base of which is in the mucous membrane of the nose. This method was inaugurated by Michael, who, in a meeting of the Sixth Congress for Internal Medicine, reported the result of a hundred carefully observed cases treated after his method.

In eight cases there was within the next few days after the first insufflation no further attack; of these patients, five remained cured, three had renewed attacks. An essential amelioration of the attacks after from one to three days' treatment was observed in seventy-four per cent.; no essential improvement could be stated in twelve per cent.; progress of the disease in fourteen per cent.; cured within two to three days were seventy per cent.; in less than twenty days, twenty-three per cent.; in from three to five weeks, twelve per cent.; under treatment longer than thirty-five days, three per cent. (I give these statistics as they are recorded in Dr. Hirsch's paper.) In about twenty cases there was an essential qualitative improvement of the attacks after the first insufflation. The disease—that is, its spasmodic stage—had lasted, when treatment was begun in twenty-eight cases, from one to eight days; in thirty-eight cases, fourteen days; in twenty-four cases, from three to five weeks; in ten cases, from six to thirteen weeks. These statistics are significant for the value of Michael's method, because they show that nearly two thirds of the cases had been treated while being in the stage of acme, the fact of seventy-four per cent. of good results thus being the more remarkable. The results were the better the earlier the cases came under treatment. Good results were also obtained when treatment was begun after the disease had already existed six weeks or longer.

Michael places much stress on the fact that not only the frequency of the attacks, but, moreover, their severity, is diminished by his method. He is of the opinion that the fatal cases are to be attributed not to the frequency, but to the severity of the attacks.

Concerning the technics (*not technique*, as linguistic corruptionists insist on introducing into our language) of the insufflation, Michael uses a straight glass tube twenty centimetres long, which he introduces in the straight direction corresponding with the nasopharyngeal canal; generally one insufflation into each nostril in twenty-four hours is sufficient. Instead of a glass tube I have used Mattison's powder projector, which I find safer and more convenient.

I have insufflated quinine exactly mixed with equal parts of powdered sugar. Some have used quinine with gum arabic, others have seen good results from insufflation of *resina benzoes*, others again have insufflated boric acid with powdered coffee. A warm advocate of Michael's method is Baginsky. A few voices have been heard discarding this mode of treatment. Hardly any remedy is infallible, and there may be cases in which insufflation is not. On the whole, from what I have read and observed myself, I am obliged to say that no treatment, except the carbonic-acid inflation, impressed me more favorably.

After having enumerated the topical remedies, Hirsch speaks of those which are directed against the general infection. I shall only mention, without giving the details of Hirsch's article, those which are best known. The first of all is also in this form of application—quinine. It has been recognized as the most effective; it has been praised as a specific; but all its advocates agree that it is the most difficult to administer *per os* on account of its bitter taste. The preparation of tannate of quinine in the shape of chocolate lozenges is pleasant enough to take, but it is much less reliable than the solutions in sulphuric or hydrochloric acid.

Next to quinine, antipyrine has been warmly recommended. Sonnenberger, the principal advocate, gives his experience with this drug as follows: Antipyrine in whooping-cough is to be given in somewhat smaller doses, as it is given to act as an antipyretic—namely, in whooping-cough the rule is to give as many centigrammes as the child is months old, and as many decigrammes as it is years of age; to older children relatively smaller doses—for instance, for a child of eight years only 0·5 of a gramme [about seven grains] *pro dosi* is required. It is to be administered three times a day in sweetened water—best after eating; in some cases a fourth dose during the night may be taken. This treatment has to be continued for weeks in succession, at least until the attacks cease. Given thus systematically it acts the better the earlier in the course of the disease it is resorted to; but even when begun later it has an ameliorating effect. Sonnenberger, judging from his experience, looks upon antipyrine as a true specific against pertussis. Quite a number of other authors who have tried antipyrine have spoken less favorably of it. I myself made carbonic-acid inflations in three cases in which the systematic antipyrine treatment had been followed for about a week, and I found the curative effect of the carbonic acid to be much more prompt. Some authors, especially Hirsch, who tried antipyrine in from eighty to ninety cases, have, indeed, come to the conclusion that this remedy does not shorten the duration of the disease, that it only ameliorates the attacks.

As a matter of course phenacetine and acetanilide have also been advocated, without, however, finding much favor. Resorcin, terpine hydrate, talamon, and creosote are likewise mentioned; the latter of these has had a fair trial by many, myself included. It has been alleged that under creosote treatment the duration of the disease will not exceed six weeks, in some not one or two weeks.

For completeness's sake I will mention some remedies of which I have read—namely, benzol, *decoctum herbæ thymiæ*, antispasmin (narcein natrium), asafœtida, calomel, and cocaine; the latter has been applied in five-, ten-, to twenty-per-cent. solutions by means of a brush to the pharynx and larynx, and has also been given internally. It stands to reason that the prolonged or rather often-repeated application of this dangerous drug, if it is at all permissible, is not commendable.

All who have read Niemeyer's story of the wife of a general who treated whooping-cough by means of the rod (I do not know if this story is found in the later editions of his work, or if it is inserted into its English translation) will wonder how such psycho-physical culture could ever be seriously considered by the celebrated author.

Now I will do justice to the note in *Pædiatrics*, the journal mentioned at the beginning. I shall give all that Hirsch says about bromoform:

Special attention is due to bromoform, which was first employed by Stepp.[*] He based his recommendation of the remedy on the results he had had with it in one hundred cases. He observed that the administration was very soon followed by cessation of vomiting, and by amelioration and lessened frequency of the attacks and return of appetite. Recovery took place in from two to four weeks. Unpleasant effects were never noticed. The mode of administration is the most simple. It is to be given in a dark dropping glass on account of its tendency to decompose; three grammes only should be prescribed at one time. The number of drops which are to form a dose are to be given in a teaspoonful of water. On account of its specific gravity bromoform falls in the shape of a pearl to the bottom of the spoon; therefore it has to be seen to that the whole of the contents of the spoon enter the mouth of the patient.[*] The dose of the remedy, according to Stepp, is, for a child of three to four weeks, one drop three to four times a day; older infants, two to three drops three times a day; children from two to four years, four to five drops three to four times a day; children until eight years of age, four to five drops three to four times a day, the dose to be regulated according to the intensity of the attacks. From five to twenty grammes were needed in the whole in the single cases. Unpleasant effects were observed only in one instance—in a child of a year and a quarter a deep narcosis was brought on, probably by an overdose. Ether injections, however, restored the patient.

Likewise favorable are the reports of Schippers,[†] who, from observation of one hundred and forty-nine cases, considers it as a harmless remedy, shortening the course of the disease; in complications acting beneficially.

Nauwelaers,[‡] Neuman,[#] and Cassel[‖] speak conditionally well of it. The first complains of its producing diarrhœa, the two others say that it only ameliorated the intensity of the attacks, but that they could not say it shortened the course of the disease.

Much less favorably judges Ullman,[△] who considers its effect only as that of a light narcotic. Lichtenstern saw from the strictly carried out bromoform treatment no extraordinary results. Norden, who reports the experiences of Lichtenstern, reports also a case of bromoform poisoning. The patient by mistake had been given six grammes; he recovered, and from the time of this intoxication the whooping-cough was completely and permanently cured. Norden's conclusion is that enormously large doses would be required to cure whooping-cough promptly by means of bromoform.

I myself, having read the first enthusiastic communications on bromoform, intended to give it a trial, but was unable at that time to obtain the drug in this city. Later on, when I saw the less favorable reports, I decided not to try it at all; it seemed to me no better than antipyrine and certainly less commendable than quinine.

It is impossible to give anything like a complete enumeration of all that has been tried against whooping-cough; and perhaps it would be of no advantage to do so. I will only add that manipulations of the inferior maxilla have been practised by O. Naegeli[◊] to suppress the convulsive attacks; but in the literature at my disposal I have not seen that such procedure has been adopted by any one but the inventor.

Although the number of remedies against whooping-cough is already innumerable, the fact is that we learn of new ones every year. This must and will be so as long as none of all as yet tried has given perfect satisfaction, and as long, perhaps, as bacteriology has not yet succeeded in giving us a firm rationale for the therapy of this disease.

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[*] *Deutsche med. Wochenschrift*, 1889, 31.

[*] In the original article of Steppe, which I have before me, there is also the following formula: ℞ Bromoform., gtt. x; spiritus vini, 3·00–5·00; aquæ, 100·00; syrup., 10·00.

[†] *Weekb. van het Nederl. Tijdschrift voor Geneesk.*, 1891, ii, 9.

[‡] *Jour. méd. de Bruxelles*, 1891.

[#] *Therapeut. Monatsh.*, 1890, 7.

[‖] *Deutsch. med. W oc*, 1892, 5.

[△] *Archiv f. Kinderheilk.*, xiv, 19.

[◊] *Correspondenzbl. f. schweiz. Aerzte*, 1889, 14.

A. Rose, M. D.

ELECTROLYTIC URETHROTOMY.

New York, *November 20, 1895.*

To the Editor of the New York Medical Journal:

Sir: Owing to the fact that I am not familiar enough with the English language, I failed to refute the statement made by Dr. S. Alexander on the 12th inst., during the discussion on my communication to the New York Academy of Medicine, and I shall be much indebted to you if you kindly publish in your columns my answer to the criticism of my learned colleague.

I had the pleasure of meeting Dr. S. Alexander once for a few minutes, and I had no idea that such a superficial examination of my method of operation was sufficient for any one to jump at the conclusion that it was of no more value than a trifling divulsion.

The two cases referred to by Dr. Alexander were as follows:

Case I.—I never saw the patient before. Dr. Alexander examined him first, and, very probably in view of demonstrating that the stricture was not very narrow, he passed through the stricture with considerable pressure not a No. 13 bulbous bougie, as he said, but a No. 20. The patient suffered great pain. When a No. 20 bulbous bougie can pass, the patient does not require to be operated upon, and I am justified in saying here that he could not have been operated on by me, since Dr. Alexander had operated on him by divulsion just a few minutes before. Consequently, I could not have admitted that it was a good test case.

Case II.—The stricture was so narrow and so hard that the thinnest filiform bougie could hardly be passed through. With a current of ten milliampères I passed through the stricture in forty-five seconds. Eight days later I passed a sound No. 22 French, with no pain, bleeding, or fever. The patient was discharged completely cured.

I fail to understand how Dr. Alexander can make such contradictory statements by saying that after electrolysis the bulbous bougie had shown but little increase in calibre and that the operation was little more apparently than a trifling divulsion. If I had done divulsion the patient would have bled, and if the electrolysis had not enlarged the diameter of the urethra, how is it that the stream of urine has so largely increased that Dr. Alexander admitted himself that it had been large?

J. A. Fort, M. D., of Paris.

THE TREATMENT OF EPISTAXIS, AND *LUXATIO ERECTA.*

Cuba, N. Y., *November 18, 1895.*

To the Editor of the New York Medical Journal:

Sir: In the *Journal* of November 16th Dr. H. L. Armstrong says, in the opening sentence of his article describing a new syringe for the treatment of epistaxis: "In the treatment of epistaxis there is probably no remedy which will give such general satisfaction as hot water."

Allow me to suggest that the use of hydrogen dioxide with any suitable syringe will be followed by very gratifying results.

For several years I have used a teaspoonful or more of the remedy, in full strength, in every case of epistaxis, with immediate relief. In operations in the nasal cavity, when bleeding obscures the vision, inject the remedy, ask the patient to blow the nose, and the field is clear again.

The procedure may be repeated as often as needed.

In this connection a case of luxatio erecta of the shoulder joint may be reported.

A year ago an intoxicated man, in going up stairs, fell to the bottom. When he was found his arm was in an erect position. While the arm was in that position the man was quite free from pain, but any attempt to bring it to the side was followed by severe pain. I found the arm erect, the forearm resting against the head slightly; the head of the humerus could be felt in the axilla, just beneath the glenoid fossa.

The reduction was easy by traction upward in the direction of the arm and upward pressure upon the head of the humerus, then bringing the arm down to the side.

A Velpeau bandage was applied.

In three weeks passive motion was attempted, and in two months the use of the arm was perfect, and has continued so.

The case was very similar in detail to one reported in the *Journal* of October 19th by Dr. Albert M. Judd.

Herbert F. Gillette, M. D.

THE TEACHING OF OBSTETRICS.

Kansas City, *November 18, 1895.*

To the Editor of the New York Medical Journal:

Sir: I want to commend in the main the views of Dr. Painter, as expressed in his address on obstetrics, an abstract of which was published in the *Journal.* I believe the time is not distant when this very essential branch of medical education must be taught by demonstration and recitation and the didactic lecture discarded absolutely.

As to the teaching of practical obstetrics to-day, there are certainly more than two institutions where students are trained in the bedside practice of midwifery. In the Kansas City Medical College obstetric clinic last year the students of the senior class had an average of eight cases, and the patients were delivered by individual students, under the supervision of an obstetrician, after the manner of one of the New York maternity hospitals.

While there is undoubtedly room for improvement, this work is not to such a degree neglected as might seem from a cursory reading of Dr. Painter's paper.

George C. Mosher, M. D.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN GENITO-URINARY SURGERY.

Meeting of November 12, 1895.

Dr. Alexander W. Stein, Chairman.

Urethral Chancroid.—Dr. George K. Swinburne presented a case of this kind. There had been a urethral discharge after an incubation period of seven days, but no gonococci had been found. The patient then complaining of pain during irrigation of the urethra, a more searching examination had been made, with the result of finding a chancroid in the fossa navicularis. A microscopical examination at this time had shown the presence of rod-shaped bacilli with clubbed extremities, together with micrococci. The latter had been obtained in pure culture by sterilizing a portion of the surface of the man's abdomen and implanting the organisms there under a watch crystal. There had been no other lesion in the urethra, and the ulcer had healed readily under astringent applications.

Chylous Hydrocele.—Dr. F. Tilden Brown presented a young Syrian in whom this condition had been found. Four ounces of a milky fluid had been removed last July from the enlargement in the left side of the scrotum, and a 1-to-20 solution of carbolic acid had then been injected into the sac. The patient said that his urine had never contained any blood or chyle. The pathologist had reported that this milky fluid contained a number of cells and numerous fine granules in active motion, but no leucocytes. On allowing the milky fluid to stand, a creamy layer formed on top, and by shaking with ether considerable fat could be extracted.

Ligation of the Vasa Deferentia for Prostatic Hypertrophy.—Dr. Brown also presented a case in which he had done this operation. The patient, a man of seventy-two years, had enjoyed excellent health up to six years previously, when he had had his first attack of retention of urine. The present illness had begun in a similar manner on June 13, 1895. Examination in the hospital had shown marked enlargement of the prostate and some albumin in the urine, but no casts. Rest in bed and division of the meatus had failed to give any relief, so on July 11th, under cocaine anæsthesia, the vasa deferentia had been ligated in two places, about a quarter of an inch apart. About a week after this operation he had begun to pass a little urine voluntarily, and had steadily improved until at the present time he could void his urine all but about three residual ounces. He now considered himself thoroughly restored to health. Palpation *per rectum* now showed a very decided diminution in the size of the prostate. The speaker said that he had proposed the operation in this case because he had seen a fatal result from castration in another patient of about this age and in apparently more vigorous health. He had been surprised at the amount of improvement, but felt that it had been due to the operation.

Dislocation of the Testicle.—Dr. Ramon Guitéras presented a man whose testicle had become dislocated as a result of his slipping in getting off a wagon and the wheel of the wagon passing up between his limbs. Although the man had remained in a hospital the dislocation had not been discovered. When Dr. Guitéras had first seen the case the testicle had been found turned away from the epididymis and lying under the dartos. After making two incisions, one on the penis and the other on the scrotum over the globus major, reduction of the dislocation had been effected.

Nephropyosis due to Nephrolithiasis.—Dr. Guitéras also presented a report of a case of this kind. The patient, a woman, forty-five years of age, had been admitted to the Columbus Hospital complaining of pain in the back and in the right lumbar region, and of vomiting and rapid emaciation. The urine had been found to contain a small quantity of albumin and a few casts, and at times it had been observed to contain considerable pus. From this it had been argued that the case was one of nephropyosis, and that the impaction of calculi prevented the escape of the pus at times. On May 27th nephrectomy had been performed under strict asepsis. After the removal of the kidney it had been found to measure eight inches in length, five and a half inches in width, and four and a half inches in thickness. On incision, about a pint of pus had been evacuated. The capsule of the kidney was markedly hypertrophied and the parenchyma completely atrophied. On the day following the operation the patient had been seized with acute suppression of urine, which had terminated fatally in two days. The autopsy had shown the remaining kidney to be normal in size, and the cause of death to be probably acute congestion of the kidney. Possibly if nephrotomy had been done instead of nephrectomy, owing to the much shorter time necessary for this operation, this fatal congestion might not have occurred.

The Palliative Treatment of Gonorrhœal Tubal Disease.—Dr. W. R. Pryor read a paper on this subject. He said that in suppurative disease it was his practice to remove the uterine appendages and also the uterus, but while this was an ideal method on account of its completeness and thoroughness, the removal of the uterus was often followed by severe neurasthenia. The surgeon in this field was often compelled to do incomplete work in order to preserve to the woman certain physiological states. He had operated in seventeen cases of first attacks of acute salpingitis. The inflammatory process in these tubes had seemed to be almost entirely confined to the wall of the tube. He would assert positively that a proper and early resort to curettage often brought about a cure. All but three of his patients had recovered completely, and had menstruated normally after the operation. In some of these acute cases the greatest relief was obtained from curettage followed by a breaking up of adhesions through a crescentic incision in the posterior *cul-de-sac* and the insertion of a Mikulicz dressing. The least could be done for cases of recurrent salpingitis, in which the tubes were, as a rule, much congested and the fimbriæ matted together. The uterus was usually dense and fibrous, and curettage had but little effect on the tubal disease. In hydrosalpinx and pyosalpinx the uterus should be curetted, the *cul-de-sac* opened, and, without disturbing the matted viscera, the tubes punctured and their contents evacuated. The tubes should then be packed with gauze. Where it was possible to protect these women from re-infection, he believed that a permanent cure could be secured in eighty per cent. of the cases. The foregoing methods were intended for the general practitioner, who, without resorting to the severer surgical operations, could do a great deal more for these unfortunates than had been formerly accomplished by the old let-alone method of treatment.

An Electrolyser for the Surgical Treatment of Stricture.—Dr. J. A. Fort, of Paris, read a paper with this title. (See page 625.)

Dr. Robert W. Taylor said that he had placed six cases of urethral stricture at Dr. Fort's disposal for the purpose of demonstrating his method of treatment. Dr. Newman's method, that had been in use in this country for many years, was so thoroughly unscientific that it called for little comment at this time. It was true that some of Dr. Newman's cases had exhibited slight improvement, but this he was inclined to attribute to the mild stimulation produced by the very feeble electrical current employed in this method of electrolysis. It was, of course, much too early to speak of the ultimate results of Dr. Fort's method, but from what he had seen of it it seemed to be really a Maisonneuve operation, using electrolysis. This method split the urethra and placed it in a favorable condition for the more important part of the treatment of urethral stricture—the subsequent dilatation. It certainly appeared to be a safe and efficient method of performing internal urethrotomy up to No. 22 or 24 French, and a strong point of the treatment was that no effort was made to reach those higher numbers which involved deep cutting. The first of his cases in which Dr. Fort had operated had been an exceedingly unpromising one, and one in which most surgeons would certainly have resorted to external urethrotomy, and yet the result had been positive and the patient had made a very speedy recovery. Dr. Newman's plan had been to burn away the mucous membrane as well as the stricture, while with Dr. Fort's electrode, shaped like a Maisonneuve knife, the action of the electrolytic current could be controlled and limited with the utmost nicety. The treatment caused very little pain or hæmorrhage. The latter, it had seemed to him, might be due to the compressing effect on the blood-vessels, or to a coagulation of the blood, and if this was the correct explanation it also accounted for the immunity from sepsis, as it must at the same time close the channels of infection.

Dr. **William J. Morton** said that he had had no personal experience with the method in the treatment of urethral stricture, and therefore his remarks were based on an experience with electrolysis in other departments and on a theoretical knowledge of electro-therapeutics in general. Dr. Fort's operation was in reality an internal urethrotomy, and for the time being the parts were made aseptic by the oxygen and chlorine liberated by the electrolytic current. A current of ten milliampères seemed to him very small to accomplish in such a remarkably short time and with such a large-surfaced electrode what had been done by Dr. Fort in most of these strictures, and this fact only showed that the strictures could not have been dense. He felt sure that he could accomplish electrolysis of a stricture much more rapidly than even Dr. Fort had done, if he substituted another metal for the platinum of the electrode and connected the electrode with the positive pole. By this arrangement the metal of the electrode would be dissolved. He did not think that Dr. Taylor had quite fairly represented Dr. Newman's treatment when he had said that Dr. Newman "burned his way through the stricture." Certainly Dr. Newman had distinctly stated in his writings that he used very mild currents and gave a considerable number of treatments.

Dr. S. **Alexander** said that he had only had an opportunity of seeing Dr. Fort operate by this method in two cases. In one of these, a case of linear stricture at the bulbo-membranous junction, admitting a No. 13 bulbous bougie, he had found the condition of the urethra the same after the operation as before it. He would admit, however, that it had not been a good test case. The second patient had been previously operated upon for stricture by various surgeons, including himself. At the time that he had operated, in November, 1887, there had been a stricture just within the membranous urethra, admitting a No. 8 French. Before the man had been discharged from the hospital, the urethra had taken a No. 30 French. The man had then passed from his observation. The stricture upon which Dr. Fort had just operated had been situated at the same point as in the first instance. It had admitted a No. 4 olivary filiform bougie through the whole stricture. Dr. Fort had employed a current of ten milliampères, and with considerable pressure had passed through the stricture in forty-five seconds. After this the bulbous bougie had shown but little increase in calibre, although the stream of urine had been larger. From seeing this case he had come to feel that the operation was little more apparently than a trifling divulsion.

Dr. **Taylor** said that the proof that there was something more than a simple divulsion was to be found in the discharge of detritus during the electrolysis. Dr. Fort maintained that he used little force, and that the major effect was due to the electrolysis.

Dr. C. W. **Allen** said that an ordinary needle could be passed through the base of a soft external tumor with half the number of milliampères used by Dr. Fort, and he certainly believed that the stricture was cut and not torn.

Dr. E. M. **Culver** said that he had seen these last two operations, and had observed this froth or detritus during the electrolysis, which was exactly similar to what was observed in using electrolysis for the removal of hairs.

Dr. **Guitéras** said that it had not seemed to him that Dr. Fort had used much force, and it was apparently an excellent method of treating small strictures. The comparative bloodlessness of the operation was due to the destruction of the small capillaries by the electrolytic current.

Dr. **Brown** said that it ought to be easy to demonstrate on a cadaver just what was the result of this treatment on a urethral stricture. As he had found that the Newman method of electrolysis had more easily overcome the deep strictures than the anterior ones, he had come to the conclusion that this was because the deep strictures were really not organic strictures, but contractions. The froth spoken of seemed to him to be nothing more than the material usually found behind a stricture and would serve to aid the passage of any instrument.

The discussion of the other papers was postponed.

Book Notices.

Clinical Lectures on Diseases of the Nervous System, Delivered at the National Hospital for the Paralyzed and Epileptic, London. By W. R. Gowers, M. D., F. R. S., Physician to the Hospital; Consulting Physician to University College Hospital, etc. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. vii–279.

These lectures, delivered at different times during the past three years, treat of widely different topics in the broad field of nervous disease. They are for the greater part elementary, and intended for students and general practitioners rather than for specialists.

The subjects chosen are familiar ones and little that is new will be found in the pages of this small book; nevertheless there is matter in it worthy of the attention of all physicians. The clinical lecture is the most attractive form of instruction, and when the lecturer is fitted for his task he may, by generalization and an observance of the relative values, give the subject treated life in the mind of the listener or reader which no list of symptoms or mere statistical method could ever do.

Gowers does more than this; not only does he treat the difficult subjects in a manner at once lucid and sufficiently thorough for the purpose, but he loses no opportunity to impress upon the reader certain truths of so general an application as to be invaluable in any field. One of the principal lessons taught is method in diagnosis—not dependence on types, but a building up of the disease form from its component parts—a synthetic method so to say, and the only way to reach a result in many mixed forms, for all attempts at exact classification are more or less artificial.

The book is not exhaustive, it presupposes a knowledge of the anatomy and physiology of the nervous system, and would in no sense take the place of the larger treatises, but for the vivid pictures it gives of the common forms of disease, and especially for the principles of thorough observation and logical inference which it inculcates, it should appeal to large numbers who shrink from the special works on the subject except for occasional reference. For students it can not be too highly recommended.

Repetition is the author's motto—the reiteration of old ideas in new relations, the study of old cases in ever-changing lights. How eloquently he deprecates the search for novelty at the expense of what is old may be read at the beginning of Lecture III, and this is a lesson we may well take to heart at the present time.

Lecture II, on a mistaken diagnosis, describes a rare case of arsenical poisoning diagnosticated as one of tabes and treated for some time with arsenic until the peculiar pigmentation of the skin drew attention to the real nature of the disease.

But there are other and inevitable mistakes, for "in practice we have to treat that which is only probable as if it were certain; we could not treat two thirds of our cases properly without doing this."

Lecture VIII describes a case of acute ascending myelitis and compares it with Landry's paralysis. Both may be caused by a toxic blood condition. The presence of gonorrhœa in this case makes its causative relation highly probable. The nature and action of toxæmic influences are discussed in this and other lectures, especially in Lecture XVIII, on saturnine tabes.

In Lecture XVI, on neuralgia, the importance of the newer views of the structure of the gray matter is emphasized.

The last two lectures, on optic neuritis, show the importance of a thorough knowledge of the use of the ophthalmoscope to the diagnostician.

It is needless to speak of the lucid style, of the philosophical breadth, or of the scientific earnestness of the lecturer. Gowers needs no introduction; his teaching is a type of the best clinical work. As with Jenner, Clarke, Hughlings Jackson, and others of the English school, his first object is not pure science for science's sake, but the development of the healing art. Not that he is the less scientific, there are none more so; but he is more humane.

We may be pardoned an enthusiasm perhaps out of place, so replete with philosophy and so inspiring is this book to student and teacher alike. Not all the newest pathology and laboratory work or theoretical investigation of the most thoroughly German accuracy can attain to the results of such clinical study.

The Diseases of the Liver: Jaundice, Gallstones, Enlargements, Tumors, and Cancer: and their Treatment. By J. Compton Burnett, M. D. Second, Revised and Enlarged, Edition. Philadelphia: Boericke & Tafel, 1895. Pp. x–244.

This is a homœopathic book in which the writer extols the virtue of various homœopathic preparations. There is no attempt at pathological study in the work, and therefore there is little to recommend in it.

Burdett's Hospital and Charities Annual, 1895. Containing a Review of the Position and Requirements, and Chapters on the Cost of Management, of the Voluntary Charities, and an Exhaustive Record of Hospital Work for the Year. It will also be Found to be the Most Useful and Reliable Guide to British, American, and Colonial Hospitals and Asylums, Medical Schools and Colleges, Religious and Benevolent Institutions, Dispensaries, Nursing and Convalescent Institutions. By Henry C. Burdett, Author of *Hospitals and Asylums of the World,* etc., Editor of *The Hospital.* London: The Scientific Press (Limited); New York: C. Scribner & Sons; Boston and Chicago: D. C. Heath & Co. Pp. 832.

This annual is so well known and our admiration of it has been so definitely expressed that the volume for 1895, differing as it does from its predecessors only in modernness, scarcely calls for more than our briefly expressed opinions. Indeed, it is a remarkable work, not because of its great inclusiveness within moderate space, but because of the ability with which the matter has been handled and the perfect form in which it is presented. In our review of the volume for 1894 we called attention to many of its valuable features and devoted some space to their consideration. The scope of the present volume is practically the same, and indeed its title-page conveys as clear an idea of its contents and as true a statement of facts as it would be possible to give even were we inclined to be verbose. One or two things, however, require our more critical attention. In the chapter styled Chief Events and Progress in 1894 is again discussed the much-vexed question of hospital and dispensary abuse. One feature of this question, the injustice done by this abuse to those practitioners who are utterly dependent upon their professional incomes and whose patients are chiefly among the poorer classes, is theoretically remedied by the author in his proposal that medical appointments shall be no longer honorary but salaried. So much sense is conveyed by his words on this subject that a portion of them may be quoted. He says: "In the present day free medical service is a grave injustice to the medical profession as a whole, and especially to the general practitioner who has to take small fees and to get a living in the poorer districts of our cities. Free medical service often deprives the hospitals, and therefore the nation, of the best brains which the medical schools produce from year to year; because the younger men, unless they have a fortune to begin with, are unable to wait for a professional income until they have made a great name for themselves. Free medical service produces, therefore, little but hardship for the medical profession, while it may be and often is inimical to the public interests; but free medical service injures the hospitals too, for there can be no doubt that for economical reasons it would be infinitely cheaper for each hospital to pay the whole of its medical staff than to accept their voluntary services." Could anything be truer?

Of hospital construction, the author laments the many mistakes made because of the incompetence of medical boards and architects to handle adequately in theory the peculiar requirements which pertain to hospital buildings. To correct the mistakes which thus occur, the matter of construction, he thinks, should be left to the judgment of an expert, meaning by that neither a physician nor an architect, but a specialist, to whom hospital construction and management are a business. There are few such men, however, and, though we in the United States have at least one whom the author names, yet we can not justly accept the credit given us of having this better system, for we have not invariably or even often employed experts, in the strictest meaning of the word, and hospital construction with us also is too often faulty.

From the standpoint of benevolence the annual is a revelation and an incentive. Its advice is sound and in the highest degree practical. It more than ever deserves the subtitle it bears on its cover, *The Year-book of Philanthropy.*

Indurative Mediastino-pericarditis. By Thomas Harris, M. D. (Lond.), F. R. C. P., Physician to the Manchester Royal Infirmary, etc. Reprinted from the *Medical Chronicle,* 1894–'95. London: Smith, Elder, & Co., 1895. Pp. 67.

We are glad to welcome the appearance in book form of this valuable study of a little-known disease. Harris has collected twenty-five cases (including three of his own, which are described in detail), with autopsies, and he has carefully analyzed them.

He thinks that, although not commonly seen, this affection can not be so rare as is generally supposed. Well-marked examples present a very interesting history and one which is sufficiently distinctive to permit of the recognition of the disease before the autopsy.

Pathologically, three classes of cases may be recognized: 1. Cases of adherent pericardium with marked increase of fibrous tissue in the mediastinum, adhesion of the exterior of the pericardium to surrounding parts, and frequently a caseous affection of the mediastinal lymphatic glands. 2. Cases of adherent pericardium, with thickening of the sac and adhesions of its exterior to surrounding parts, but little or no general mediastinitis. 3. Cases of increase of fibrous tissue in the mediastinum without any internal pericardial adhesions. Class 3 is very rare; Class 2 is much more common than Class 1.

Contrary to the general impression, the author finds that the affection is not most frequently met with in children, and that trauma is not commonly its cause. Tuberculosis is a not infrequent cause of the affection, but no mention is made of the discovery of tuberculosis in the autopsies of some of his collected cases.

In many cases there was found a history of some acute illness, generally a chest affection and frequently a pericarditis, occurring some time previous to the manifestations of symptoms of the mediastino-pericarditis. In some cases no cause for the disease could be found. The symptoms are, as is well known, the ordinary symptoms of cardiac derangement; but two symptoms which have been considered diagnostic by Kussmaul and others—viz., the *pulsus paradoxus* and engorgement of the right external jugular vein—Harris finds are not diagnostic, since they both occur under other conditions and may be absent in mediastino-pericarditis. His study of the various causes of *pulsus paradoxus* is careful and interesting.

Leprosy in its Clinical and Pathological Aspects. By Dr. G. Armaner Hansen, Inspector-General of Leprosy in Norway, and Dr. Carl Looft, formerly Assistant Physician to the Lungegaards Hospital. Translated by Norman Walker, M. D., F. R. C. P. Ed., Assistant Physician for Dermatology, Edinburgh Royal Infirmary. With Numerous Photographs and Colored Plates. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent, & Co., Ltd., 1895. Pp. xi–162.

While of no special value to us, in this country, where one has so rarely a chance to observe leprosy, this work is a valuable addition to the literature of the subject. The length of time over which the studies of the authors have extended —more than twenty years—and the experience they have had with the disease would lead one to give weight to statements of theirs that differ from those of observers who perhaps have not had like opportunities. They base their views on observations of too extended a nature to warrant any suspicion of their being premature or founded on insufficient knowledge. Among other anatomical distinctive points between tuberculosis and leprosy the *never* finding the typical giant cell in the latter is emphasized. Again, the position of the lepra bacilli as being *in* the cells and not lying in the lymph spaces would appear to be pretty well established. In the chapter on ætiology the question of heredity is discussed most interestingly and to the end of putting this aside as an ætiological factor, leaving contagion the sole cause for the propagation of leprosy, as was done by Drognat-Landré, who in 1869 published a book with the title, *De la Contagion seule cause de la propagation de la lèpre.*" The drawings are all excellent, especially those dealing with the pathological histology, and illustrate well the text of the chapter on the structure of the leproma. The translation is good and clear and goes far toward making this, aside from the excellence of its matter, a very readable book.

A Manual of Obstetrics. By A. F. A. King, A. M., M. D., Professor of Obstetrics and Diseases of Women and Children in the Medical Department of the Columbian University, Washington, D. C., etc. Sixth Edition. With Two Hundred and Twenty-one Illustrations. Philadelphia: Lea Brothers & Co., 1895. Pp. xxiv–533.

That the author of this manual should not have expected its continued success reflects credit upon his modesty rather than upon his judgment, for in it are the elements which make success in works designed for students; that is, condensation, clearness, and excellence of classification. To be sure, there is little that is original in the matter contained in it, but originality is not the author's claim, and if it were it would be as righteous a claim as most obstetric works can boast. "Meddlesome midwifery" is notoriously dangerous, and obstetric originality is apt to be little less so. If, therefore, the work is conservative, so much the better. King's *Manual* has certainly deserved its success; it has been of untold help to the student of medicine, and we venture to predict, even with the sixth edition, that the end is not yet.

The Science and Art of Obstetrics. By Theophilus Parvin, A. M., M. D., LL. D., Professor of Obstetrics and Diseases of Women and Children, Jefferson Medical College, etc. Third Edition. Carefully revised. Illustrated with Two Hundred and Sixty-nine Woodcuts and Two Colored Plates. Philadelphia: Lea Brothers & Co., 1895. Pp. x–685.

As a branch of medical science obstetrics advances but slowly; not, however, because of lack of devoted and faithful work on the part of its practitioners, but rather because the obstetric millennium would seem more nearly to have been approached than that of any other branch of medicine. Not that the obstetrician more than others can afford to rest in his efforts and be satisfied with what is, but that fewer problems remain for him unsolved than for others. For this reason obstetric literature changes but slowly. The third edition of Dr. Parvin's *Obstetrics* is no exception to this rule. It is revised, modernized, and more plenteously illustrated, but its form and scope are about as they were before. This, because of the excellence of previous editions, is not to be regretted, and we confidently expect the continued and merited success of the book.

An Introduction to Pathology and Morbid Anatomy. By T. Henry Green, M. D., F. R. C. P., Physician and Special Lecturer on Clinical Medicine at Charing Cross Hospital, and Physician to the Hospital for Consumption and Diseases of the Chest, Brompton. Seventh American from the Eighth English Edition, revised and enlarged by H. Montague Murray, M. D., F. R. C. P., Physician to Out-patients and Lecturer on Pathology and Morbid Anatomy at Charing Cross Hospital. Illustrated by Two Hundred and Twenty-four Engravings. Philadelphia: Lea Brothers & Co., 1895. Pp. 598.

If by the title "introduction" is meant such simplicity of expression and force of presentation as shall make the matter easily comprehensible, and if it is intended to convey the idea that the work is not highly elaborated, specialistic, and exhaustive, then the word is appropriately used and descriptive.

In the sense of meagreness and scantiness, however, the word "introduction" is not applicable to the book, for we obtain from it an excellent acquaintance with the subject which, if we like, more exhaustive works may make an intimacy. Seven previous editions form a sufficient reason for not calling attention to the work in detail. Though revised and enlarged, it is true, this last edition differs in no essential from its immediate predecessor. The book is exceptionally well arranged, clearly written, and containing a sufficiency for him who would know pathology only that he may read and practise medicine with intelligence. The addition of a large number of new illustrations to this edition is a great improvement, especially as they are well chosen, well executed, and, many of them, diagrammatic. The work of the publishers is unusually good, but it is to be regretted that an elaborate colored frontispiece should be prepared and inserted only to adhere to the page it faces and therefore to be ruined. This might have been prevented.

A Manual of Organic Materia Medica. Being a Guide to Materia Medica of the Vegetable and Animal Kingdoms, for the Use of Students, Druggists, Pharmacists, and Physicians. By John M. Maisch, Ph. M., Phar. D., Late Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. Sixth Edition. Revised by Henry C. C. Maisch, Ph. G., Ph. D. With Two Hundred and Eighty-five Illustrations. Philadelphia: Lea Brothers & Co., 1895. Pp. viii–526.

The present edition of this work conforms to the Pharmacopœia of 1890. It therefore differs from the fifth edition in that respect as well as in some few additions which modern investigation and its results have made necessary. Beyond these not pronounced changes, the work remains as before, and it is well that this is so, for to revise this work with a view to radical change and reconstruction would be folly. No more fitting monument to the late Dr. Maisch could there be than the perpetuation of this book, and, to this end, the revision by his son is as filial and appropriate as the result is satisfactory. The revision is not free from error, as witness Ceylon cinnamon, which no longer is official as *cinnamomum* but as *cinnamomum zeylanicum;* nevertheless these mistakes are few and the work is, as ever, a valuable one.

BOOKS, ETC., RECEIVED.

Pædiatrics. The Hygienic and Medical Treatment of Children. By Thomas Morgan Rotch, M. D., Professor of the Diseases of Children, Harvard University. Illustrated. Philadelphia: J. B. Lippincott Company, 1895. Pp. xii–17 to 1124.

Handbook of the Diagnosis and Treatment of Skin Diseases. By Arthur Van Harlingen, Ph. B. Yale, M. D., Emeritus Professor of Dermatology in the Philadelphia Polyclinic, etc. Third Edition, enlarged and revised. With Sixty Illustrations, several of which are in Colors. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. xvi–17 to 577. [Price, $2.75.]

The Art of Compounding. A Text-book for Students and a Reference Book for Pharmacists at the Prescription Counter. By Wilbur L. Scoville, Ph. G., Professor of Applied Pharmacy and Director of the Pharmaceutical Laboratory in the Massachusetts College of Pharmacy. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. 5 to 264. [Price, $2.50.]

The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By William Osler, M. D., Fellow of the Royal College of Physicians, London, and Professor of Medicine in the Johns Hopkins University, Baltimore, etc. Second Edition. New York: D. Appleton & Co., 1895. Pp. xvi–1143.

A Manual of Syphilis and the Venereal Diseases. By James Nevins Hyde, A. M., M. D., Professor of Skin and Venereal Diseases, Rush Medical College, etc., Chicago, and Frank H. Montgomery, M. D., Lecturer on Dermatology and Genito-urinary Diseases, and Chief Assistant to the Clinic for Skin and Venereal Diseases, Rush Medical College, etc. With Forty-four Illustrations in the Text and Eight Full-page Plates in Colors and Tints. Philadelphia: W. B. Saunders, 1895. Pp. 8–17 to 618. [Price, $2.50.]

Report of the Trustees of the Newport Hospital. Presented to the Corporation at its Twenty-second Annual Meeting, July 9, 1895.

The Pasteurization and Sterilization of Milk. By E. A. De Schweinitz, Ph. D., U. S. Department of Agriculture. [Reprinted from the *Yearbook of the U. S. Department of Agriculture.*]

Die Colofixation bei Mastdarmprolaps. Von Dr. Sarfert. [Separat-abdruck aus der *Wiener medizinischen Blätter.*]

Die Apoplexie des Pankreas. Von Dr. Sarfert. [Sonder-abdruck aus der *Deutsche Zeitschrift für Chirurgie.*]

Transactions of the Grant College Medical Society, Bombay, from January to December, 1894.

Some Interesting Laryngeal Neoplasms. By Walter F. Chappell, M. D. [Reprinted from the *Manhattan Eye and Ear Hospital Reports.*]

The Physician's Visiting List (Lindsay & Blakiston's) for 1896. Forty-fifth Year of its publication. Philadelphia: P. Blakiston, Son, & Co.

Memory as a General Function of Organized Matter. By Professor Ewald Hering, of Chicago. An address delivered before the Imperial Academy of Sciences, at Vienna, May 30, 1870.

Report of the Stamford Typhoid Fever Epidemic. By Professor Herbert E. Smith.

The Relative Value of Operative and Hygienic Measures in the Treatment of Tuberculosis and Neoplasms of the Bladder. By L. Bolton Bangs, M. D. [Reprinted from the *Annals of Surgery.*]

The Treatment of Uterine Retro-displacements by Vaginofixation. By Dr. Frederick Holme Wiggin. [Reprinted from the *New England Medical Monthly.*]

New Inventions, etc.

A SIMPLE ADJUSTABLE TRIAL FRAME.

By F. W. Marlow, M. D., etc.

SYRACUSE, N. Y.

The accompanying woodcut gives a general idea of a trial frame, in the construction of which an attempt has been made to combine the simplicity, rigidity, and lightness of the ordinary trial frame with the adjustability of the more complicated models.

The frame is capable of adjustment in the following respects:

1. The distance between the lenses can be varied to any desirable extent.

2. The position of the nose piece can be changed—(*a*) in the vertical direction, (*b*) the antero-posterior direction, and (*c*) laterally, for adaptation to noses which are nearer to one eye than to the other.

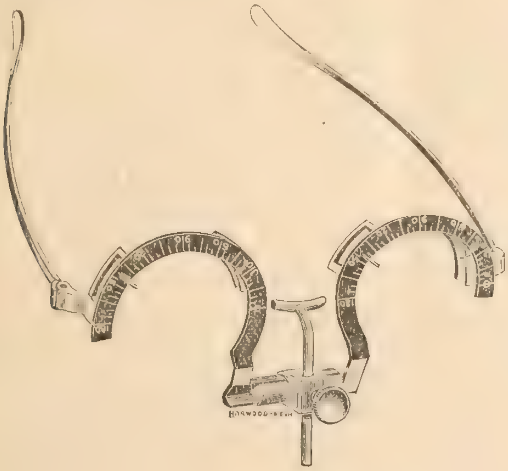
These adjustments having been made, are all fixed by one screw.

The frame is constructed to hold three lenses before each eye.

The lenses are dropped into position from above, and, being held in their grooves by gravity only, can be very rapidly changed.

The main points in the construction of the frame are noted in the following brief description:

The horizontal bar connecting the two halves (of the frame) is divided longitudinally into two portions, which slide upon one another, one fitting as a sector or wedge into the other, the whole forming a cylinder, held together by a band of metal, containing a block, which is forced down upon the wedge by a screw.



Between the end of the screw and the block, and in a groove in the latter, lies the vertical portion of the nose piece, which can be slid up and down in the groove when the screw is loosened.

The band of metal holding the two portions of the horizontal bar together can, when the screw is loose, be rotated around the bar and slid to any part of it, thus permitting of universal adjustment of the nose piece.

When the screw is tightened, the frame is as rigid as if made of one piece of metal.

The grooves containing the lenses are placed as near to one another as the thickness of the lenses will permit, and all the metal unnecessary for holding them in position is cut away, thus reducing the weight and permitting the cylindrical lens to be held between the thumb and finger for the purpose of rotation while still in the frame.

Two hooks are provided in front of each eye on the face of the frame for a third lens, and will be found to add greatly to its convenience.

Finally, the face of the frame is black, and the markings of the graduated scale are white, making it very easy to read.

If, in connection with this, the axis marks on the cylindrical lenses are blackened with ink or some other suitable substance, the facility with which the direction of the axis of the cylinder is read is greatly increased.

The weight of the frame is a few grains greater than that of the ordinary non-adjustable two-celled article.

The frame has been made for me by the American Optical Company, of Stockbridge, Mass.; but I have also to thank Messrs. Bausch and Lomb, of Rochester, N. Y., and Mr. George Bausch, of this city, for much assistance in working out some of the details.

A few frames have been made, and can be obtained for the present from Mr. George Bausch, Syracuse, N. Y.

401 Montgomery Street.

Miscellany.

The Treatment of Syphilis by Injections of Syphilitic Antitoxine.—The November number of the *British Journal of Dermatology* contains an abstract of a paper read at the Section in Dermatology at the recent meeting of the British Medical Association by Dr. Edward Cotterell, who remarked that syphilis had been, and was now, being treated by some surgeons with injections of animal serum, the rationale of this treatment being that, as no one had yet succeeded in producing any of the manifestations of syphilis by inoculation or otherwise in the lower animals, there must be some property in their tissues which rendered them proof against syphilis.

Dr. Frederick Mott, said the author, had suggested that possibly the injection of serum obtained from a person who had gone through an attack of syphilis, and so had been rendered safe from subsequent attacks, might be more efficacious in the treatment of a recent attack of this disease than the serum obtained from animals, and the speaker had determined to put this method of treatment into practice.

The following arguments, he said, had led him to try the experiment:

1. One attack of syphilis confers immunity from subsequent infection upon the individual affected, the exceptions to this rule being so rare that they may be entirely disregarded. Therefore an individual who has, or who has had, syphilis possesses some property within himself which renders him immune from any fresh infection from this disease.

2. Although at the present time it has not been definitely proved, still it is highly probable, that syphilis is due to some specific micro-organism, and that the symptoms of so-called secondary syphilis are due to the production of a toxine by this specific bacillus. So, again, it is probable that the immunity observed from second attacks of syphilis is due to the presence of some material in the blood which for want of a better name we may term "syphilitic antitoxine."

This, said the author, was consonant with Dr. Klein's statement that when an animal had passed through one attack of a given infectious disease—that is, when an animal had served as a host for the growth and multiplication of a particular pathogenic bacterium—it was found that its blood had acquired a peculiar faculty. The blood had become capable, not only of inhibiting the further growth of the bacterium, but also of neutralizing the toxines produced by the bacterium.

Animals, therefore, which had acquired immunity possessed in their blood a something that they had not had before, and this substance belonged to a group of substances called antitoxines.

3. It is a matter of common observation that a child, the subject of hereditary syphilis, may be born of a woman who has never exhibited—as far as can be made out—a single sign or symptom either of the primary or of the secondary manifestations of syphilis, and in addition she shows herself immune to the poison of that disease, for she can not be inoculated with it either by her own syphilitic offspring or by the poison from any other source.

Without going too deeply into the nature of this strange immunity, said Dr. Cotterell, it might perhaps be explained by presuming that by some means, possibly due to some peculiar property of the placenta and its circulation, only the syphilitic antitoxines from the fœtus reached the tissues of the mother, and in this way she was rendered immune to the disease which the father had transmitted to his offspring.

Passing on to the practical application of these theories, he briefly related the following results so far obtained in eighteen cases where this method had been the only one employed in treating the disease:

1. In the early stages of syphilis—*i. e.*, when there was only a sore and glandular enlargement—injections of this serum caused the sore to heal rapidly. The adenitis in the groin generally became intensely marked, the skin and throat symptoms were absent, or only slightly marked. 2. Where the case was not seen until the rash and throat symptoms developed, the shin eruption faded rapidly, much more rapidly, as a rule, than under mercurial treatment, but the throat symptoms disappeared rather slowly. 3. The general health improved. 4. The serum from an individual with well-marked secondary syphilis appeared to be more active than that obtained from a patient with tertiary symptoms. 5. The amount to be injected had not been accurately determined, but he had used the serum in doses of from half to five cubic centimetres.

These conclusions, said Dr. Cotterell, had been arrived at after over six months' experience with the method of treatment. The number of cases had been too small and the length of time too short to make more definite statements upon the method, but he would be glad if other members of the profession would give the method a trial and report upon it. He especially recommended its trial by army surgeons, as they had the best opportunities of observing the results of treatment of syphilis, from the fact that they could keep their patients under observation for a prolonged period, a thing which was next to impossible with hospital patients.

A New Treatment for Simple or Complicated Fractures of the Fingers and Toes.—The *Presse médicale* for November 2d publishes a description of a new apparatus, which was invented by M. Schmidt, for the purpose of practising extension, using the nail of the fractured finger as a means of support.

The apparatus itself is composed of a small board made more or less in the form of the palm of the hand or of the sole of the foot. Near the edge of the board, which should rest against the root of the digits, is an extension on which the fractured finger or toe is placed. On the end of this extension is a hook. In applying this apparatus there must be ready for use a gimlet, strong silk or ordinary thread, a needle, and a rubber tube. The procedure is as follows: At some distance from the free edge of the nail two holes are bored with the gimlet at equal distances on each side of the median line of the thumb. Then with a needle the two ends of thread are passed through the holes (the needle must pass from the palmar surface to the dorsal surface of the nail), and after this is done the board, covered with a layer of cotton, is slipped under the hand and placed in such a manner that the healthy fingers may clasp the free edge, and the fractured finger is placed on the extension. The opposite edge of the board is then attached to the hand by means of small bands of adhesive plaster passing around the wrist. A band of tarlatan wrapped around the board and the hand, but leaving the fingers free, holds the apparatus in place. On the hook at the end of the board the rubber tube is placed, the two ends of which are strongly tied, and, in drawing on the loop in the direction of the finger, the two ends of the thread, which pass through the holes in the nail, are attached to the rubber tube. At this moment the fracture is reduced and the fragments are held in place owing to the extension and to the counter-extension accomplished by the thread and the rubber tube. During the first three days the traction should not be strong, in order not to strain the nail too much; but from the fourth day traction should be increased by tightening the thread. The apparatus is left in place from two to three weeks.

According to M. Schmidt, his apparatus presents considerable advantages, such as free circulation in the fingers; the fragments do not rub against each other; and the seat of the fracture being exposed, the physician can easily watch the position of the fragments. Massage may easily be applied, also the necessary dressings in case of complicated fractures, etc. Furthermore, in cases of articular fracture the extension prevents ankylosis or articular rigidity.

In twenty-five cases in which this treatment has been employed, says the writer, onychia has never been observed. Sometimes a softening of the root of the nail supervenes, which disappears, however, as soon as the apparatus is removed. In two cases only this softening lasted until the nail fell out, pushed by the new one which had formed underneath it.

The Value of Anæsthesia by Infiltration.—The *Medical News* for November 16th publishes an article by Dr. Weller Van Hook, of Chicago, on this subject.

The use of cocaine in local anæsthesia, he says, was at first followed by the most satisfactory results in operations upon the mucous membranes, the resorptive powers of which facilitated the application of the drug directly to the nerve endings. In imitation of this natural method of reaching the sensory nerves, hypodermic injections of the same solution were readily thought of, and at once it became a practice, which is still popular, to inject strong solutions of cocaine (from two to ten per cent.) into the subcutaneous lymphatic spaces. The best results by this method are obtained when, as in the finger or penis, the return circulation can be interrupted by circular constriction, and the entire dose be retained as a depot of anæsthetizing material. Corning, says the author, has used hard rings pressed upon flat skin areas, in order to similarly interrupt the circulation of the fluids that tend to carry away the anæsthetizing substance. Under this practice there are three zones of sensory nerve activity—a zone of complete anæsthesia corresponding to the area in which the cocaine is in sufficient concentration to completely overcome the sensibility of the nerve endings and filaments, a zone in which sensation is partially inhibited, and an area in which the anæsthesia gradually fades away.

It is easily seen that if by osmosis or by the mechanical movement of fluids the cocaine is brought into contact with all the nerve structures in approximately one degree of concentration, and if this concentration is exactly the same as that required to inhibit nerve action, the desired result will be accomplished with a minimum quantity of the drug.

Referring to Dr. Schleich's method (concerning which we summarized in the *Journal* for August 3, 1895, an article published in the *Australasian Medical Gazette*), the author says that the failure of the infiltration method up to the present time to become popular depends upon the fact that a special procedure is required. This, however, he says, is so simple and easy that physicians need only read an account of it to understand and practise it. As local anæsthesia can be induced by it in a few moments, every intelligent worker must grant its advantages and apply it in practice.

Several simple but important points must be borne in mind in order to insure success under special circumstances. Of these, he says, probably the most important is that inflamed tissues are supersensitive and must not themselves be infiltrated until the neighboring normal tissues have been anæsthetized. For example, to inject fluid into the apex of a furuncle without preparation would be a cruelly painful procedure; but if the operator carefully anæsthetizes the skin all around the boil before infiltrating the inflamed structures, he will be able to open the suppurating focus absolutely without pain. Schleich is in the habit of advancing upon such abscesses from two foci upon opposite sides of the seat of infection.

The author states that he has found it necessary to use the finest and sharpest needle points in working on such delicate tissues as the skin and mucous membrane of the prepuce, since, if the needle is pushed a trifle too far, the fluid lodges not in the skin, but under it, leaving the cutis sensitive. By observing this precaution he has been able to avoid general anæsthesia in removing an inflamed tight foreskin from a man seventy-two years of age.

When large nerve trunks have to be severed, a drop or two of a five-per-cent. solution of phenol is recommended to be injected as nearly as possible into the sheath of the nerve.

In amputating digits the infiltration should be begun from two points at opposite sides of the member, the infiltration being continued all along the line of proposed incision, and the deeper tissues, including the periosteum, being infiltrated with great care.

The author recently had occasion to extract a large, loose body from a man's knee joint. After infiltration of the skin and subcutaneous areolar tissue the capsule of the joint was similarly infiltrated, and the joint body was removed without pain. The wound was sutured, and the patient made a good recovery.

The most serious case, says Dr. Van Hook, in which he has employed this method was one of an operation for varicocele. The veins were ligated through an incision an inch long; and, as the scrotum was very long and lax, it was amputated. The wound was sutured. The pain felt was very slight.

Schleich, continues the author, has performed a number of cœliotomies under infiltration anæsthesia, removing ovaries and tubes, etc. He will find few imitators in any but the most uncomplicated cases. But every one will see the advantage of dispensing with general anæsthesia when abscesses originating in the appendix vermiformis are adherent to the abdominal walls and require simple drainage. Perhaps in no cases is local anæsthesia more desirable in preference to general narcosis than in the primary opening and drainage of empyema cavities, since even ether anæsthesia is dangerous when the thoracic viscera are compressed.

The Use of Camphorated Naphthol in the Treatment of Tuberculous Peritonitis.—The November number of the *Revue mensuelle des maladies de l'enfance* contains an abstract of an article in the *Revue médicale de l'Est* for November, 1894, in which Dr. Spillmann relates the history of a case which came under his observation. The patient, a child thirteen years old, showed all the symptoms of pleuro-pulmonary tuberculosis in the second degree, and tuberculous peritonitis with ascites. The general condition was bad, and the temperature varied from 100·2° to 103° F. in the morning, and from 102·1° to 103° in the evening. After the abdomen had been punctured and twenty-six ounces and a half of ascitic liquid been drawn off, a hundred and fifty grains of a solution of camphorated naphthol was injected into the peritonæum. This was well borne, but during the following month the fever and the pulmonary symptoms seemed to become more intense. About five weeks later, however, the fever disappeared, the appetite returned, the bowels became regular, and the pulmonary symptoms ceased.

When last seen by the author, the child seemed completely transformed. The abdomen was elastic and not painful; the digestive functions were normal; percussion and auscultation did not reveal any trace of the pulmonary lesions; and, he says, the child may be considered as having been completely cured.

The same journal contains an abstract from the proceedings of the *Société médicale des hôpitaux* for May, 1895, in which M. Netter relates the histories of three cases in which this treatment was employed. In the first two cases the results obtained were not sufficiently convincing either for or against the method. In the third case, however, it was different. The patient was a child, seven years old, and a diagnosis of tuberculous peritonitis was made. M. Netter was rather inclined to think that there was cirrhosis complicated by peritonitis. However, on the advice of a hospital surgeon, the treatment by camphorated naphthol was adopted. After a puncture had been made through which a hundred and nine ounces and three drachms of liquid flowed, about seventy-five grains of camphorated naphthol were injected into the peritoneal cavity. No symptoms immediately followed this injection, but at the end of half an hour agitation and convulsions supervened, which did not yield to treatment, and in a few hours death occurred.

At the autopsy it was proved that the patient had suffered from hypertrophic cirrhosis, with acute generalized peritonitis which had manifestly been caused by the injection of naphthol. In view of this fact, while admitting that the healthy peritonæum does not act in the presence of naphthol like the tuberculous peritonæum, M. Netter states that he will not employ this treatment in tuberculous peritonitis.

Apolysine.—The *Presse médicale* for October 26th contains an article by Dr. de Nencki and Dr. de Jaworski, of Warsaw, who deal with the subject from a chemical, physiological, and clinical point of view. Apolysine, according to them, is a yellowish-white crystalline powder of a sour taste, less acid than citric acid, and of a specific odor. It is soluble in cold water in the proportion of one in twenty-five, and quite soluble in boiling water. It melts at a temperature of 161·3° F. It is easily dissolved both in alcohol and in cold glycerin. Concentrated sulphuric acid dissolves it without changing its color; concentrated nitric acid also dissolves it, and the heated solution becomes of a pale orange color. Apolysine in concentrated hydrochloric acid, in the proportion of a grain and a half to a cubic centimetre of the acid, heated and then diluted with ten times its volume of distilled water, with a few crystals of chromic acid, assumes a red color like that of Burgundy wine. Burned on a platinum plate, apolysine leaves no ash, which proves that it contains no mineral substance.

The aqueous solution of apolysine does not become cloudy with nitrate of silver, and sulphureted hydrogen produces no thickening or any sediment in the acidulated solution of apolysine. Ammonium sulphide also gives no sediment, which proves the absence of metals.

In its origin apolysine may be compared to phenacetine. Both compounds spring from paraphenetidine, and there is no difference between them, except that an atom of hydrogen in paraphenetidine [phenacetine?], in the amide group (NH_2), is replaced by the element of acetic acid, while in apolysine the same atom of hydrogen is replaced by the citric-acid nucleus. On comparing the chemical formulas of these combinations their origin, their formation, and their difference may be more readily understood. They show that apolysine is very closely allied to phenacetine.

Apolysine is not toxic. The authors have made several experiments on frogs and on rabbits. Into the former they injected one-per-cent., four-per-cent., and eight-per-cent. aqueous solutions of apolysine, which were perfectly tolerated by the frogs. Into a rabbit weighing a little over two pounds and a half they injected forty-five grains of a ten-per-cent. solution, and no abnormal symptoms were observed.

To discover under what form this drug is eliminated from the organism, the authors ascertained the proportion between the free sulphuric acid and the combined acid before and after the ingestion of apolysine. The experiments were made on themselves as well as on animals. The medium dose was from fifteen to forty-five grains a day. The results of these experiments led them to conclude that apolysine passed partly into the urine under the form of paraamidophenol and paraphenetidine.

Apolysine, according to the authors, possesses remarkable antipyretic and analgetic properties. They administered the drug both as an antipyretic and as an analgetic and as an antipyretic only. They employed it in many cases, and in the febrile affections a lowering of the temperature of from one to two degrees was observed, which was maintained for three or four hours at a time. In painful affections, such as neuralgia, etc., the pain disappeared rapidly after the administration of a few doses, which varied from eight to forty-five grains every twenty-four hours. The authors state that in many of these cases other analgetics had been used previously without success.

Their clinical observations have led them to the following conclusions: 1. Apolysine administered to fever patients lowers the temperature and at the same time prevents a series of coexisting symptoms, particularly pain. 2. Given to patients suffering with neuralgia, etc., it diminishes the violence of the pain, allays hyperæsthesia, shortens the duration of the attack, and often completely suppresses the symptoms. 3. Owing to its chemical properties, it acts promptly and regularly, and exercises no injurious effect on the organism. Its employment is contraindicated during fasting and when there are excessive acid secretions in the stomach. 4. Finally, apolysine is more soluble than other drugs in the same group, and consequently more promptly and more easily absorbed.

Tartarlithine.—The action of cream of tartar in dropsy and in acute nephritis, as a diuretic which does not irritate the kidneys, has long been known, and prior to the introduction of diuretin, which has met with so much popularity in such cases, it was very generally prescribed. It was credited with producing a "cooling effect" upon the blood, and, alone or with sulphur, it was perhaps used oftener in cutaneous and rheumatic affections than any other remedy. In uric-acid manifestations, however, it has been thought, an organic salt of lithium, instead of potassium, would have an action generally more favorable to all the symptoms than the well-known product of argols. It is with this in view that tartarlithine has been presented to introduce an organic-acid treatment instead of the alkaline waters and salts of lithium, which constantly increase artificial alkalinity in gouty and rheumatic patients, and it is found that in suitable cases two five-grain tablets of tartarlithine, taken four times a day in water, will increase the normal alkalinity of the blood, eliminate uric acid freely, and not disturb the normal ease with which the kidneys can perform their function. In gouty manifestations of the mouth or in the forms of eczema due to uric acid, tartarlithine is said to be beneficial and refreshing. The tablets are effervescent and palatable.

Severe Wasp-bites followed by Vomiting and Purging.—In the *Medical Reporter* for October 16th, Mr. Joseph Benjamin, of Ashmedabad, relates the following:

On March 16, 1895, a few Parsee families went over to see a clock tower, where they were attacked by a swarm of wasps. They were stung on the head, face, ears, neck, and hands. One of the ladies, two gentlemen, and a lad were severely stung. All were in great agony and restless. The lady was unable to speak for some time, and one of the gentlemen was very restless. The heads, hands, and faces of all were very much swollen. Shortly afterward all were attacked with vomiting and diarrhœa, which ceased on the next day. Tincture of opium, with aromatic spirit of ammonia, were given internally, and lead lotion was used externally. These cases, says the author, are recorded because in all these patients vomiting and diarrhœa supervened after the bite, a phenomenon not generally found in wasp-bite.

Bogus Medical Journalism.—While the *Medical Record* hails with satisfaction the advent of any new medical journal which appears to have a legitimate sphere, and always extends to it such encouragement as lies in its way, it seems right that a word of condemnation should be uttered respecting the too numerous periodicals which are launched upon the profession without any reasonable necessity or justification. Not a few are conceived solely by advertising agents—men who have neither interest nor sympathy with the profession save as they can make it a means of livelihood for themselves—and published at more or less nominal prices in anticipation of a circulation which will enable them to obtain the advertisements upon which they depend for their profits.

It is unfortunate that there are always medical gentlemen to be found who, for a small sum, are willing to "run" these journals. Again, it not infrequently happens that a medical journal is started by some doctor who is desirous of exploiting his own abilities and skill, and at the same time add to his library such books as he may be able to induce publishers to send to it for "review." We know of journals published in this country, by individuals and by associations of physicians, whose almost sole *raison d'être* is the exchanges and editorial copies of books which they obtain, without which they would cease to exist, and to obtain which they must always speak of them in terms of commendation. The publishers, not the subscribers, must be considered first. Medical journals of their class are a delusion and a snare to the profession, and an injury to all rightly conceived and conducted periodicals.

As we have often stated, we believe in local medical journals and their generous support by their legitimate constituency; and we can not but regret that they should have to compete with journals such as we have mentioned. Of course, there is no way to prevent the publication of these illegitimate journals, and the only recourse in the hand of the profession is, as far as possible, to patronize only those of whose origin and management they have some personal knowledge. In other words, avoid subscribing to medical journals which have not good and well-known pedigrees on the sides of both publisher and editor.—*Medical Record.*

Original Communications.

A CYST OF THE NASOPHARYNX AND A CYST OF THE OROPHARYNX.*

By JONATHAN WRIGHT, M. D.

It is now ten years since Tornwaldt published a paper in which he claimed that sinuses in the naso-pharyngeal mucous membrane were very frequently the seat of chronic inflammation and the origin of the symptoms of postnasal catarrh; that the "pharyngeal bursa" is a normal structure in the nasopharynx; that naso pharyngeal cysts are very common. Great credit is due to Tornwaldt for drawing attention to these conditions, but his work has unfortunately fallen into discredit because of its inaccuracy.

In the first place sinuses in the naso-pharyngeal mucous membrane are not very common, while naso-pharyngeal cysts are very rare. In the next place, there are a great many cases of naso-pharyngeal catarrh which have for their lesion neither cysts nor sinuses. Lastly the "pharyngeal bursa" has been shown to be probably not a normal anatomical structure, but the result of chronic inflammation.

I need only remind the members of this association that the explanation of the formation of this "bursa" and of these cysts and sinuses, when they do occur, is that the folds and projections of the mucous membrane in the nasopharynx of infancy and adolescence become agglutinated at their edges or on contiguous sides, thus forming sinuses or closed cavities which in the first case is favorable to the production and discharge of thick muco-pus, and in the second case to its retention, dilating the walled-in space to the proportions of a cyst.

Six years ago I reported † a case of postnasal cyst. Unfortunately, the tissue removed was not examined microscopically. Since then I had not seen another case until last year, when one came to my class in the Out patient Department of Roosevelt Hospital, and was reported by Dr. Lamphear.‡ Microscopical examination in this case showed that the cyst cavity, as well as its external surface, was lined with pavement epithelium.

I may remark here that while normally the epithelium in the nasopharynx is columnar it shades off below into the squamous type, and in many cases of hypertrophied lymphoid growths, even in the vault, the covering is in part or wholly of squamous cells, evidently the result of irritation from secretions or rubbing surfaces. The cyst cavity in the case reported by Dr. Lamphear being lined with squamous epithelium, we may conjecture that the formation of the cavity by inclusion began subsequently to the metamorphosis of the epithelium. Dr. Lamphear says that with the exception of the report of my previous case, referred to above, there is no account of the condition in American journals. This pathological condition, then, it would seem, is of rare occurrence or rarely observed. I am under the impression that the case of cyst of the nasopharynx which I desire to bring to your notice in this paper is not, as were the others, in all probability, an inclusion cyst. Glandular cysts, I think, we can exclude. Glands are exceedingly scarce in the immediate vicinity of lymphoid tissue in the nasopharynx, and, when they are seen, show no tendency to cystic dilatation.

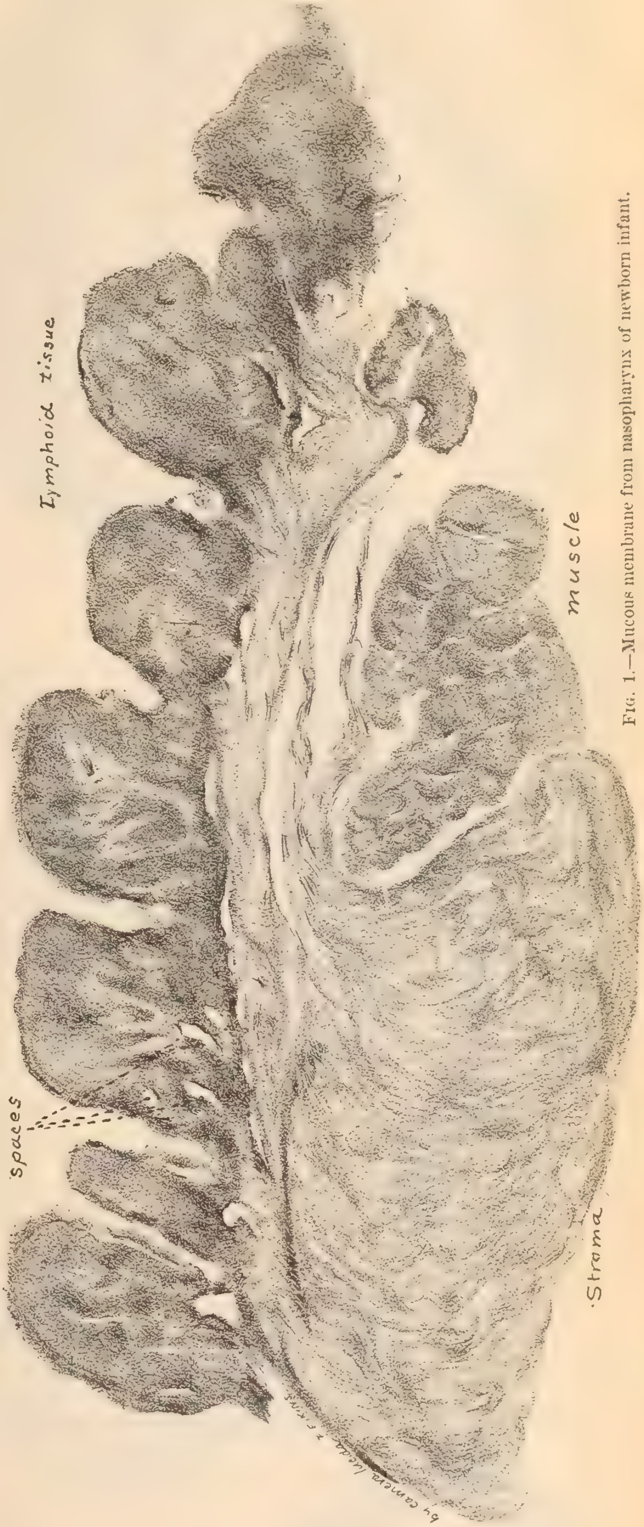


Fig. 1.—Mucous membrane from nasopharynx of newborn infant.

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* Read before the American Laryngological Association at its seventeenth annual congress.

† A Cyst of the Pharyngeal Bursa. *Medical News*, September 7, 1889.

‡ A Cyst of the Pharyngeal Tonsil. *Med. Record*, August 4, 1894.

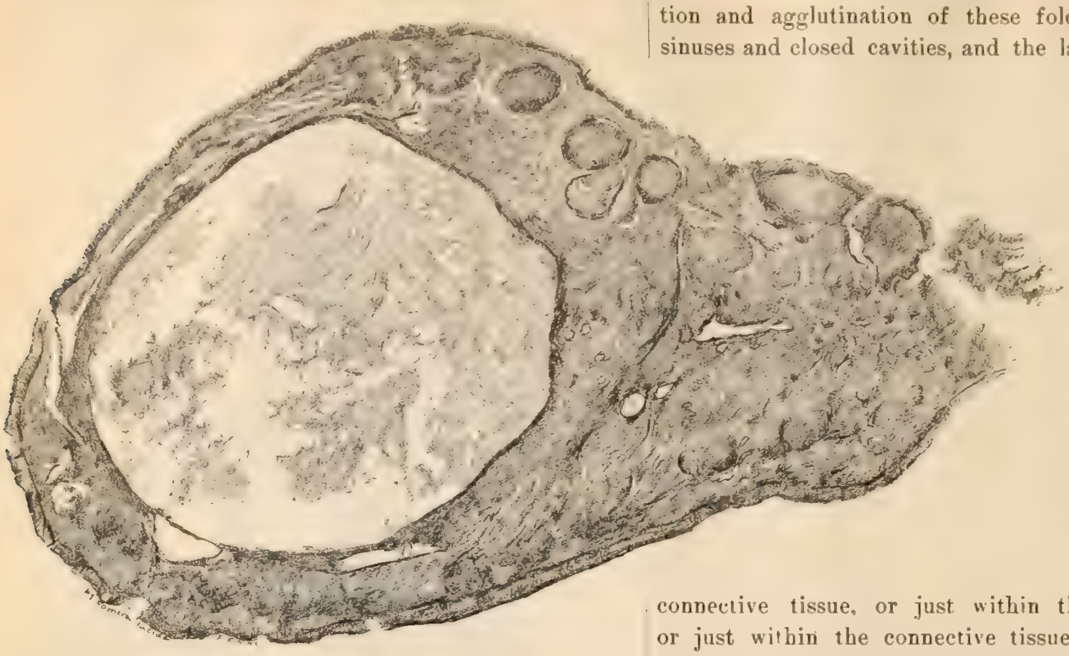


Fig. 2.—Naso-pharyngeal cyst.

I desire to draw your attention for a moment to a section made transversely through the folds of the mucous membrane in the nasopharynx of a stillborn child, a drawing of which under a very low power, is to be seen in Fig. 1. You see how sharply the lymphoid structures are separated from the underlying stroma. You also see how easily in the inflammation of infancy and childhood the distention and agglutination of these folds may give rise to sinuses and closed cavities, and the latter dilate into cysts by the accumulation of fluids from the lymphatics and blood-vessels. But there is in this section another point of interest which I believe has a more direct bearing upon the naso-pharyngeal case. Near the base of the folds may be seen oblong spaces, either just where the lymphoid tissue borders on the connective tissue, or just within the lymphoid tissue, or just within the connective tissue itself. Examining the walls of these spaces with a high power, it is seen that they are lined with a single layer, frequently not complete in this section, of very thin endothelial cells. These are evidently lymph spaces visible, because they are here not gorged with the round cells which crowd them elsewhere. Now it becomes evident that retention cysts may originate from these spaces becoming closed cavities.

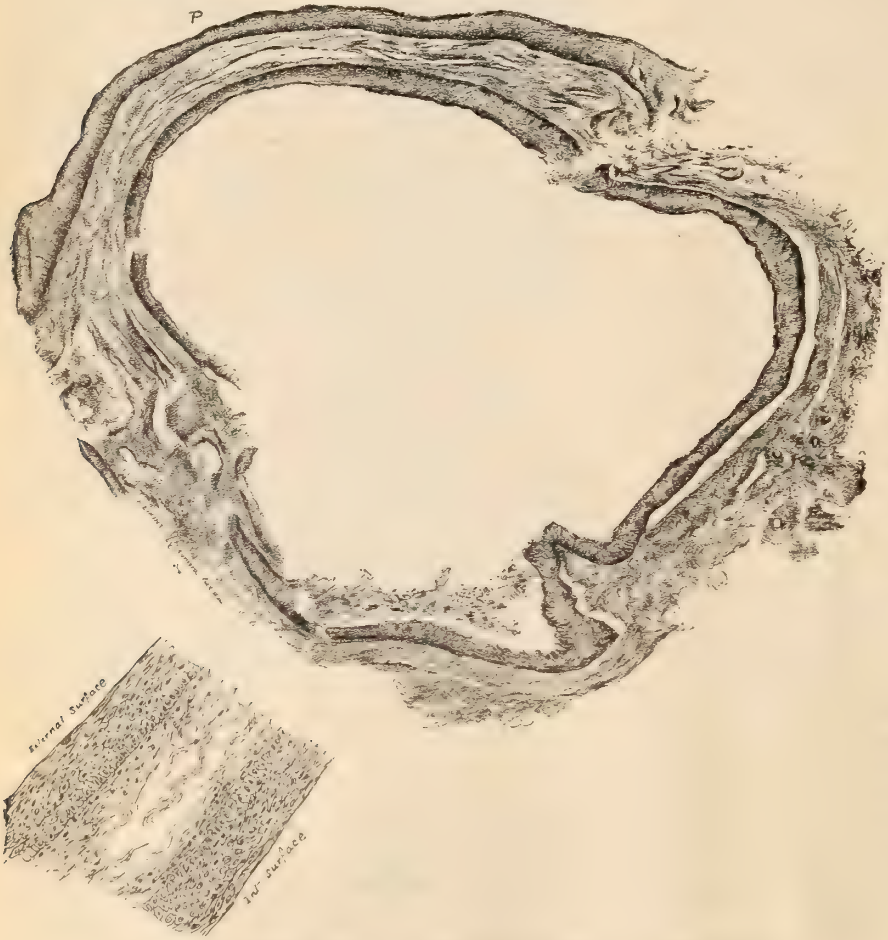


Fig. 3.—Oro-pharyngeal cyst. P, point from which high-power drawing is taken.

With these preliminary remarks I desire to report two cases—one of a cyst in the nasopharynx and one in the oropharynx :

Case I.—Last year a young colored woman was being treated at the dispensary for an ethmoid trouble, requiring removal of considerable portions of the ethmoidal turbinated bone. A round piece of tissue, about the size of a large pea, apparently lymphoid, was seen in the pharyngeal vault not far from the sæptum. Its presence apparently gave rise to no symptoms, and there was no other lymphoid growth. It was removed with cutting forceps, and a section of it I show you in Fig. 2. Externally the surface is covered by typical columnar epithelium. A cyst cavity, as you see, occupies about one half a mass of lymphoid tissue. The cavity has no epithelial or endothelial lining at all, though it may have been destroyed by hardening in alcohol. Near one side of the large cavity, however, is an oblong space, such as is shown in Fig. 1. This also has no lining of cells. The absence of an epithelial lining in the cavity, while it is present on the surface, and the small size, would rather militate against a cyst by inclusion, while the absence of epithelial lining and of any other evidence of glands in the vicinity would tend to exclude a glandular origin. The cyst cavity measures three by four millimetres; the other spaces are scarcely visible to the naked eye. I am therefore inclined to think this a dilated lymph space, although I can not be sure of it.

Case II was that of a middle-aged woman, with a family history of cancer, who came complaining of something growing in her throat for the last eighteen months. A small tumor, a trifle larger but of the same shape as in Case I, was seen growing at the base of the right posterior faucial pillar, the region of squamous epithelium. It was smooth and sessile. It was cut off by forceps.

Fig. 3 is a drawing of a section of it. You will observe that it is a cyst, and has thin fibrous walls lined inside and out with squamous epithelium. No glands and no lymphoid tissue. This, then, is probably an inclusion cyst, having its origin in some acute inflammatory condition of the mucous membrane.

The character of the contents of neither of these cysts was recognized. There was some amorphous material in Case I, and in Case II it was fluid and escaped.

INTRA-UTERINE RUPTURE OF THE ANTERIOR ABDOMINAL WALL,

WITH EVENTRATION IN A NEWLY BORN CHILD.*

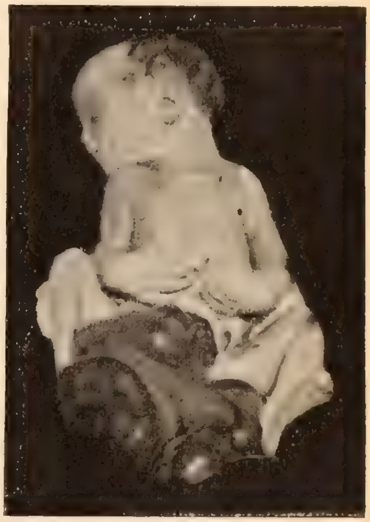
By A. BROTHERS, B. S., M. D.

Paul (*Prag. med. Woch.*, 1894, No. 35) describes the case of a woman who, two days previous to labor, slipped while walking and struck her abdomen against the sharp edge of a stone step. Although the mother showed no visible evidences of the injury, the fœtal movements ceased. At birth the stillborn child (congenitally syphilitic) was found to present a rupture of the anterior abdominal wall of a penetrating character, evidently the result of the maternal injury.

The value of such a case becomes extremely important from a medico-legal aspect. The fact that a child may be stillborn and present the evidences of violent injury, even to the extent of a penetrating abdominal wound, without the mother showing any corresponding evidence of traumatism, must be regarded as established from this case. In spite of an exhaustive research throughout recent literature, I have failed to find any other cases of this nature, and must conclude that they are of the most extreme rarity. Therefore I need not apologize for publishing the following case:

Mrs. H., a multipara, has always given birth to children without special difficulty. The present pregnancy has been marked by great pain throughout its entire course; otherwise she has noticed nothing unusual and has had no falls or injuries of any kind which she can remember. On July 27th labor pains started, and before the midwife could be sent for the child was born and struck the floor with some force. Some of the neighbors were instantly on the spot and found the child alive, but the intestines protruding through an abdominal rent. The cord was cut by the midwife, who had just arrived, and the woman put to bed. During the next few hours the gut was said to have become swollen. I was sent for and arrived several hours after the birth.

I found a well-nourished child with all the evidences of marked vitality. A large mass of intestine protruded from a small opening in the abdomen and lay between the child's legs on the pillow. On closer examination, I found the umbilical opening entirely closed and containing, as usual, the stump of the umbilical cord. About half an inch to the right, however, the intestine escaped through an opening not much larger than a silver quarter. This opening was somewhat ragged in character, and along the right margin presented distinct adhesions to the gut. The left margin was free and permitted the withdrawal of more gut and the insertion of a finger into the peritoneal cavity. The intestine was very much congested and swollen. Probably fifteen to twenty inches of the small intestine, with discolored mesentery, lay externally on the child's abdomen. Some portions seemed to be swollen to a diameter of two inches and evidently contained gas and liquid meconium. The general abdominal cavity was collapsed and the intra-abdominal space was far too small to permit of even the partial reduction of the intestine.



On raising the mass of intestine the genitals and anus were found to be absent. Instead, a large open space, covered with mucous membrane and of about the size of a half dollar, extended from the pubes to the tip of the coccyx. To either side of this cloaca (which represented the exstrophied bladder) were small projections representing the ununited halves of the clitoris. No signs of penis, vulva, scrotum, or urethra were visible. No anus could be discovered. The space was entirely distinct from the opening above through which the gut had escaped.

The diagnosis, then, was: 1. Congenital prenatal eventration from an unknown cause, perhaps due to maternal traumatism. 2. Congenital exstrophy of the bladder. 3. Congenital absence of the anus.

A hopeless prognosis under the circumstances was given. Operative interference was declined by the parents, especially as the prospects of accomplishing much were very slim.

The child lived twenty-five hours, drinking sweetened water from the spoon, and apparently not suffering much. The diapers showed that urine was being excreted. No fæces, of course, were passed.

An autopsy was not allowed, and it was only with the greatest difficulty that I received permission to have the child photographed after death.

I believe the eventration was intra-uterine, because of the presence of distinct adhesions to one side of the gut and because a considerable portion of the gut protruded when the child was picked up directly after birth. I believe, however, that the swelling of the gut may have increased after birth. The immense amount of congestion of the gut and mesentery must have consumed hours or days in its development, and could not possibly have developed within the two hours preceding my arrival.

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* Read before the Society of Alumni of Bellevue Hospital, October 2, 1895.

NECROSIS OF THE MIDDLE TURBINATE.*

By A. B. THRASHER, M. A., M. D.,
CINCINNATI.

I invite your attention in this paper to a much-talked-of subject, but one which I think merits still further study and investigation. The ætiology of all varieties of ethmoidal disease is somewhat obscure, while the treatment is far from satisfactory. I quite agree with Bosworth, that of all the nasal accessory cavities the ethmoid region is most frequently the seat of disease. . This assertion is receiving the corroboration of most rhinologists of to-day, when but a few years ago no one would have believed the statement.

The frequency of disease in this region is partly accounted for on anatomical grounds. The situation of the middle turbinate in the narrow apex of the nares, hemmed in on both sides by solid bony walls, leaves little room for inflammatory swelling and causes great pressure when the parts are swollen. In acute rhinitis the lower turbinate is doubtless affected more frequently than the middle, but there is also less danger of implicating the deeper structures or of occluding any of the natural openings of the accessory cavities. When the middle turbinate is inflamed the pressure on the adjacent walls is great, and the openings of the antrum, the frontal and sphenoidal sinuses, and of the anterior and posterior ethmoid cells are easily closed, thus causing a mechanical retention of the normal secretions, which in consequence may lead to a purulent inflammation. Whether the ethmoid is more liable to inflammation in neurotic subjects I do not know; but there is no question but that ethmoiditis lights up a train of nervous symptoms most widely varied in locality and intensity.

While ethmoiditis is a comparatively frequent disease, necrosis of this bone is certainly rare. So seldom is it present that Zuckerkandl (2) declares he has never seen it, and since his investigations were made on the cadaver his opportunities (which he never failed to improve) for seeing every pathological condition were unexcelled. Woakes (3) declares that necrosis is present as a rule whenever there is ethmoiditis. This statement, however, is not sustained by the published (4) examination of his twenty cases, the pathologist only finding true necrosis in two out of the twenty.

I can see no reason why prolonged disease of this bone may not result in necrosis, just as is the case with other bones of the body. The projection of the middle turbinate into a narrow cavity where a small amount of swelling will cause pressure and occasion retained secretions either in the ethmoidal cells or in pockets formed by the unequal contour of the adjoining surfaces—all of which conditions are favorable to the development of violent inflammation, destruction of the vitality of the bone, and consequent necrosis. Two diverse opinions have been advanced as to the causal relation of nasal polypi and necrosis of ethmoid. Woakes (5) thinks that all polypi are caused by necrosing ethmoiditis, and Bosworth (6) theorizes that the pressure of nasal polypi may produce ethmoiditis. But given a case of ethmoiditis and a polyp springing from under the middle turbinate, the conditions are certainly fairly ripe for the development of a necrosis of the middle turbinate. On the other hand, that a polyp may spring from a membrane bathed in the secretions from a purulent ethmoiditis I think quite reasonable, as the analogous condition of aural polypi from a purulent otitis media with necrosis is certainly rather common. I then think that while nasal polypi may be caused by ethmoiditis, yet, on the other hand, necrosis of the middle turbinate may reasonably be caused by the irritation and pressure of polypi.

I can not think that there is a causal relation between cysts of the middle turbinate and necrosis of this bone, yet in one well-marked cyst of the anterior extremity of the middle turbinate I discovered after removal well-marked evidences of beginning necrosis. Cysts of the middle turbinate have been so beautifully described by our able secretary (7) that a glance at his article will establish the serious character of this affection. Whether this condition be the result of a rarefying osteitis or osteophytic periostitis, in either case the conditions are ripe for a true necrosis. Greville Macdonald's theory of these cyst formations is so pretty that I offer it here (8): "The pathological ætiology of cysts involving the middle turbinate is simple enough. The process in all probability begins in an osteophytic periostitis, a condition common enough in this region, and resulting in a general increase of the size of the bone in every diameter. The free margin of the bone being incurved upon itself, the extension inward of this border, from the pathological process just mentioned, will bring it in contact, and ultimately in union, with the body of the bone. Thus a cavity may become inclosed and sealed at all points by a similar process occurring at the two extremities."

The mucous glands lining the cyst fill it with mucus, which, as is the case with all retained secretions, causes inflammation and a still further osteitis. The subject of ætiology is so interesting that I am prone to dwell upon it longer than our knowledge of the facts will justify. Before entering into the symptomatology I give a brief history of my only two undoubted cases of necrosis of the middle turbinate.

Mrs. McC., of Mount Sterling, Ky., was sent to me in 1891 for a severe pain in the left side of the nose radiating over the entire left side of the face and head. The pain was constant, although subject to periods of exacerbation so regular and so intense as to have called forth a prolonged antimalarial treatment. The left side of her nose was slightly swollen. There was a creamy discharge from the left naris which could be seen flowing down from beneath the middle turbinate. There was present a bad odor, but not such as would lead you to expect necrotic bone. The anterior extremity of the left middle turbinate could be seen much swollen, pushing hard upon the septum and down upon the lower turbinate. The enlarged middle turbinate had much the appearance of a fibroid tumor.

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* Read before the American Laryngological Association at its seventeenth annual congress.

I removed this projecting mass with a cold snare, the portion taken away being an inch long by about a third in its vertical and a quarter in its lateral diameters. The anterior extremity was somewhat bulbous. The mucous membrane was tightly drawn over a spongy bone, and perhaps a third of the outer portion of the bone was entirely dead. The adjacent ethmoid cells were exposed and thoroughly scraped with a sharp curette. There appeared to be no involvement of the other cavities, and with nothing else than a mild detergent spray the parts healed kindly and the bad symptoms disappeared. The amount of pain experienced by the patient was so great that malignant disease was feared, yet the bad symptoms subsided quickly after the operation and had not returned up to within six months ago, when I saw the patient for the last time.

Her attending physician attributed her trouble to a severe influenza which she had about a year before she first visited me.

Mr. B., aged twenty-eight years, consulted me in 1892 for an obstruction of nasal breathing. He suffered severely from neuralgia of the supra- and infra-orbital nerves, for which he had been under medical treatment for about two years with but slight temporary relief. The right middle turbinate presented as a large rounded mass, pushing out the outer wall of the nose and filling the middle meatus. There was but little discharge, and that seemed to come from a hypertrophied lower turbinate on the same side. The left naris was much narrower than the right, but otherwise normal. I endeavored to remove the growth *en masse* with a cold snare, but the tissue broke down, leaving a large open cavity with exceedingly thin walls. A part of the bony tissue removed bore well-marked evidence of being dead. There seemed to be no connection between the opened cyst and the ethmoid cells.

I have removed more or less of the middle turbinate in a large number of cases, but only in these two have I found by microscopical examination dead bone, so I think it safe to say that the middle turbinate, although quite subject to osteitis, is not frequently necrotic.

The sensation imparted by the probe while exploring this region often causes us to expect dead bone when we only feel rough or denuded bone. In neither of my two cases was the odor of dead bone prominent—not as it is, for example, in syphilitic necrosis. In neither of my cases was I sure of necrosis until I had removed the specimen, and only in the first case did I suspect it. The symptoms which arise in consequence of a disease of the middle turbinate are manifold :

1. Pain, generally referred to the infra or supra-orbital nerve, sometimes to the eye or orbit (more especially when the ethmoid cells are also involved), and occasionally to the ear. The severe neuralgia accompanying the two reported cases was perhaps the most distinguishing symptom. The pain was more like that involving the ethmoid cells (and in Case I these cells were certainly affected)—intense and prolonged. I have no doubt but that some of the severe facial neuralgias for which exsection of the nerve has been performed would have been better relieved by exsection of a diseased middle turbinate.

2. Nasal discharge, sometimes of exceedingly unpleasant character. The discharge from the cells themselves often irritates the membrane in front, giving rise to a sore and red nasal extremity.

3. Obstruction to breathing and anosmia; but frequently the breathing channel is not impeded even in severe inflammation of the middle turbinate.

4. Obstruction of the natural openings of the accessory cavities, notably the antral, frontal, and anterior ethmoid, occasioning in each case its own train of symptoms.

5. External deformity of the nose only, and when the ethmoid cells are involved the eye is often misplaced by orbital swellings.

6. Various reflex nervous phenomena.

Hajek (12) thinks that "suppuration in the middle meatus is the only positive diagnostic symptom of disease of the accessory cavities. Failing other signs, the cause of suppuration is to be sought for in the antrum. If, after treatment of the antrum and removal of all visible hypertrophies from the middle meatus, suppuration still persists, the frontal sinus is to be investigated. Finally, if pus still flows, the turbinated process of the ethmoid is sounded; if a copious flow of pus follows, we may conclude that the ethmoid cells participate in its secretion. There are no constant signs, however; subjective and objective symptoms are unreliable, and except in cases of abscess of the middle turbinate and of empyema, with orbital fistula, the diagnosis is difficult. The only constant pathological appearance is the presence of polypi or hypertrophies of the middle meatus. These are related to ethmoid disease as cause and effect. Polypi may arise from ethmoiditis; and that polypi may give rise to disease of the accessory cavities can not be strictly proved, but may be inferred."

In these remarks the author would seem to imply that disease of the antrum and frontal sinus are more frequently met with than ethmoidal disease, which is not in accord with my experience. The orbital swelling or pain is generally present in empyema of the cells, while in case of affections of the turbinal process direct inspection will generally reveal the true seat of the trouble.

Treatment.—When the middle turbinate is causing trouble, it is necessary, as a rule, to resort to surgical measures. In conditions of simple inflammation a mild alkaline spray may be followed by relief; or, where there is much congestion, a little cocaine; and in worse cases scarification, or, better still, a deep incision with a narrow sharp-pointed bistoury may be needed. When, however, the case is of long standing, and you have reason to suspect either an osteitis or a necrotic bone, then I advise a prompt removal of the offending tissue. When this can be accomplished by a cold snare I prefer this method. The drill or trephine may be necessary to enable the snare to take hold. Casselberry's (9) sawtooth scissors works admirably well in some instances. The Curtis drill I find very useful in case the bony tissue is very firm, and it can be used at the same time to open up the ethmoid cells and break down the intercellular walls. I hardly think this a proper region for the use of the electro-cautery. The inflammation following the use of the cautery on the middle turbinate, except on the anterior tip, is apt to occasion serious swelling, painful pressure, and great danger of septic infection. The cold steel-wire snare does the work nicely for me in the large majority of cases and has been followed by no serious symptoms.

Mr. Lennox Browne (10) takes exception to Woakes's treatment in the following rather strong language: "With regard to the treatment advised by Dr. Woakes, of removing either the whole or a portion of the turbinal body believed by him to be necrosed, I ask permission to record the statement that I have never yet seen a case in which I have thought it necessary to perform either the major or minor of these procedures, and have yet to meet one, other than specific, with the existence of an actual sequestrum in which the efforts of the surgeon might not be more profitably directed toward the restoration to health of tissues, so important to the function of normal respiration, than to their eradication."

Dr. Knapp (11) in his report of seven cases of ethmoiditis says: "The treatment of these diseases is very important, as spontaneous recovery has scarcely ever been observed, whereas surgical interference is not dangerous to life, benefits almost all cases, and produces permanent perfect cure in many."

It is necessary here to state that the remarks of Mr. Browne refer only to mild cases of ethmoid disease, while in Knapp's cases the cells were involved, and all produced more or less severe ocular symptoms. I must confess that after there is disease of the middle turbinate bone I place but little faith in measures directed toward the restoration to health of these tissues. Neither have I seen such dire consequences follow the partial or complete removal of a diseased middle turbinate, but, on the other hand, relief from the serious symptoms follows rapidly and certainly. It is, of course, understood that here, as in all modern surgery, careful precautions are taken to do the work as near aseptically as possible. On account of the proximity to the brain, the greatest caution should be observed to operate in an aseptic field, and after the operation to keep the parts as pure and clean as possible.

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A PLEA FOR THE MORE EXTENSIVE USE OF ANTITOXINE IN DIPHTHERIA.

RÉSUMÉ OF ONE YEAR'S EXPERIENCE. INDICATIONS AND CONTRAINDICATIONS FOR ITS USE, WITH SOME PRACTICAL POINTS IN THE APPLICATION OF THE SAME.

By LOUIS FISCHER, M.D.,
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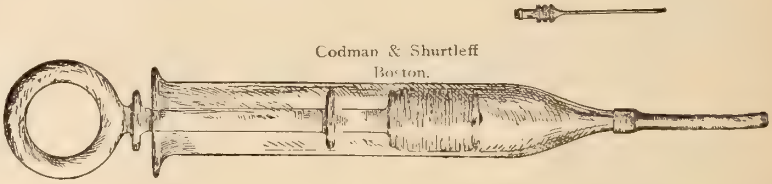
(Concluded from page 283.)

CASES such as have been cited I could cite by the score, but they would only reiterate what I have already carefully detailed as the effects and proper results attended by the use of a good and reliable antitoxine.



A word about the syringe to be used. While there are at present dozens of syringes in the market, made of tin, zinc, and all sorts of metal, hard rubber, black and of other colors, I have found that the best syringe that could be used for the purpose is the one which has been made by Codman & Shurtleff, of Boston, of which the accompanying cut is an amply good illustration. In the administration of antitoxine everything depends on (1) the absolute purity of the substance used; (2) the reliability of the same; (3) the administration of the proper quantity, after having been assured of the quality used; (4) the absolute sterility of all substances coming into contact with the antitoxine, and, first of all naturally, the syringe and its attachment; (5) the absolute sterility of the skin of the patient prior to the injection of the same; (6) and last, but not least, the strictest antisepsis or asepsis of the operator or physician giving the injection. The syringe, therefore, should be boiled and properly sterilized. I prefer to use a 0·5-per-cent. solution of trikresol, or, if that is not handy, carbolic acid of 0·5-per-cent. solution will do equally well. The syringe which has been constructed by Codman & Shurtleff consists entirely of glass and has a glass piston with an asbestus packing. A small, flexible rubber-tube attachment allows of an easier method of injection, and is well appreciated by those who have any experience in the handling of children, and know how restlessly they will toss about, and how difficult it is at times to administer an injection without doing some damage to either the patient or to the needle. The rubber attachment, therefore, on this syringe is of some value, as is the small rubber attachments on our large aspirators, which are so well known in diagnosticating the presence of pus in suspected empyema cases. Another great advantage of this syringe is that the rubber can be thrown away and a fresh piece used with each injection, and that the glass syringe can be boiled in any antiseptic solution. I need not refer to the fact that all metal syringes, be they of silver or other metal, corrode in the presence of bichloride of mercury, and, as the bichloride is one of the most favored antiseptics among physicians to-day, it is well to remember that this syringe, being of glass and glass only, can be put into bichloride as well as into any other antiseptic solution and stand the boiling. A disadvantage, if I may call it such, is that it must be handled with care, as we would any other instrument made of glass, on account of its being brittle. I have been in the habit of using a glass tongue spatula for examining the throat, so that the absolute sterility of the instrument coming in contact with the patient can be assured by proper disinfection after using it.

Among the most recent publications pertaining to serum therapy, I should like to refer to that most admirable book by Professor Adolph Baginsky, which details all his most recent experiences to date in the Kaiser and Kaiserin Friedrich Children's Hospital. In our country a most excellent book has recently appeared by Dr. George M. Sternberg, Surgeon General of the United States Army, entitled *Immunity, Protective Inoculations in Infectious Diseases, and Serum Therapy.* I have the honor of being quoted by Dr. Sternberg on pages 166 and 167. As recent experiences have altered some of the technical details there, I will first reprint from his work and then give the alteration in question. In his book he says:

> "Fischer (January, 1895) reports thirty-four cases—thirty malignant and four mild—treated with a mortality of two = 5·8 per cent. He says:
>
> "These cases were not selected, for some were poorly nourished, some in excellent vitality, with careful nursing and good hygiene. The main point was to apply the antitoxine as early as possible, and counteract the septic matter absorbed, and thereby avoid complications, besides using the local treatment of swabbing the throat with a 1-to-2,000 bichloride-of-mercury solution, using a fresh swab for each application and burning the same immediately after using it.
>
> "The technique of injection is simple. Having properly sterilized the syringe by boiling and using 0·5-per-cent. trikresol, I commence by injecting ten cubic centimetres in mild cases and twenty cubic centimetres in malignant cases, by pinching a fold of the skin in the interscapular region and allowing the serum to be slowly injected. I believe it proper, however, to have a syringe of suitable size and inject the required amount, rather than inject in several places. The calibre of the latter must necessarily be quite large, owing to the thickness of the serum, which is at times rather mucilaginous. It is proper to note all differences and effect on the false membrane and the swelling of the glands, the behavior of the temperature, the condition of the urine, the effect on the heart, and especially the pulse.
>
> "There should be no hesitation in injecting on the second day, and, if no effect is seen, repeating the injection on the third day, as there is absolutely no risk from the injection. It is a perfectly safe remedy, and shows no immediate reaction. It differs from tuberculin and vaccine in that it causes no reaction. A case of antitoxine treatment will show no symptoms directly attributable to the remedy, unless it be in some cases of urticaria. The temperature does not fall by crisis, but by lysis, with antitoxine treatment. Massage of the serum after the injection should not be practised, according to Heubner, Aronson, Baginsky, and others."

As the more recent specimens of antitoxine appeared, it was noted that the healing dose, or rather the dose contained in one of the small brown, glass-stoppered bottles, was five cubic centimetres according to the label. I have repeatedly measured the exact amount, and have invariably found that it was between five and six cubic centimetres. This whole quantity should be injected where the skin hangs very loosely, the most convenient place being the one in vogue in Berlin at the Kaiser and Kaiserin Friedrich Children's Hospital, the interscapular region. I also give preference to this point for the injection because the child, lying face downward, does not see the needle and is not so quickly demoralized, and can be easily held by the assistants holding the shoulders and the legs of the patient respectively. I therefore do not, as I am quoted by Sternberg, commence with an injection of ten cubic centimetres. but rather commence with one of five cubic centimetres of Aronson's concentrated antitoxine, and if then there is no immediate relief following, say within twenty-four to forty-eight hours, I repeat the same dose, giving the injection in the immediate neighborhood of the first one. I have never seen any ill effects following the injection done under proper aseptic or antiseptic precautions. Professor Baginsky, of Berlin, reports but one case of abscess following the puncture. I have frequently seen patients in private practice that had suffered an abscess following the puncture of an ordinary hypodermic needle after receiving an injection of morphine, so that I believe that every careless puncture of the skin, which can by reason of septic matter on the needle carry into the body beneath the skin various micro-organisms, may in this way form the focus for an abscess, and that the accidental injection of morphine or antitoxine has absolutely nothing to do with the infected matter carried in by a dirty or sometimes rusty needle. I invariably seal the point of puncture with a drop of flexible collodion, which I always carry in a small bottle having a cork with a small camel's-hair brush fitted in its centre, so that it is constantly moist with collodion and therefore does not harden. The technics then of the injection is so simple than any one can use it.

The complications arising during the course of the antitoxine treatment of diphtheria are mainly due, as experience has taught me, to the same causes that were formerly so prevalent before antitoxine was used, so that an albuminuria or nephritis or paralysis in the various forms, resulting or coming on as a sequela to the diphtheria, should not be attributed offhand to the antitoxine. A careful study of the complications and sequelæ of the several hundred cases which I have had has convinced me that, although I have seen a certain batch of cases in which all forms of complications ensued, another batch of cases would have no complications and a smooth termination ending in recovery and no loss of flesh, perhaps a slight anæmia due to the exhaustion caused by this infection within the body. In a previous paper in the *Medical Record*, April 6th, I have distinctly stated that albuminuria was sometimes seen so soon after an injection of antitoxine and sometimes could be made to disappear when the antitoxine was discontinued, and again to reappear when the antitoxine was again injected, so much so that I looked upon one and the other as a matter of cause and effect. I should like to correct myself, for in a larger number of cases, with an equally careful observation by myself as well as my colleagues, I am convinced that, although there may be impurities in the antitoxine which may at times cause an irritation of the kidneys, by far my greater number of cases not only did not show any unpleasant effects after the injection, but even the kidneys behaved much better, and kidney complications, such as albuminuria, nephritis, etc., were, on the whole, greatly lessened and improved by this mode of treatment.

I am willing to again correct myself in regard to the use of antitoxine in those cases of diphtheria in which a complicating scarlet fever arises, for I have seen a very good result in a child recently in which the scarlet fever predominated and in which the latter was a complication to the diphtheria, which had commenced ten days prior to the first symptom of vomiting and twelve days prior to the first appearance of an eruption. The same holds good in a complication of measles during the course of a diphtheria. While I will not say that all cases of diphtheria with measles, as well as all cases complicated by diphtheria in conjunction with scarlet fever, must and do end well, I am willing to be placed on record as having seen in all from twenty to thirty cases of the so-called mixed infections—*i. e.*, scarlet fever complicating diphtheria, measles complicating diphtheria, and chicken pox complicating diphtheria—in which I am confident that the worst symptoms were at times modified if not benefited by an injection of antitoxine. It all depended upon the dose used and also the kind of antitoxine injected. Naturally, an important point in the treatment of this most fatal disease is the so-called symptomatic treatment; by that I mean that a sudden high fever should be looked to at once, and the cause of the same looked into, if possible. So, for example, I could cite the case of a child, which was under treatment for diphtheria of a malignant type, in which laryngeal stenosis supervened, where it was necessary to intubate, and in which, after the final removal of the tube, the child was really convalescent. On the eleventh day from the commencement of the treatment a sudden elevation of temperature gave all indications of some existing trouble. A careful examination of both tonsils and the uvula showed a slight amount of dry and moist mucous râles; no dullness could be made out on auscultation; a slight cough existed, which later I attributed to the irritation caused by the tube used for the intubation. Nothing else was found. The child, being two years old, was not expected to expectorate as older children would, consequently the question of pneumonia was rather doubtful and a further careful examination was necessary. It was then found that the child had eaten oranges and cheese and drank some beer; in other words, a mixed and faulty diet existed, resulting in an acute catarrhal gastric fever. Having corrected the gastritis, I watched the lungs for the possible appearance of pneumonia. I determined that we were dealing with one of those acute septic forms of gastritis and corrected it at once. The child remained well after two days of treatment. It required but one careful irrigation of the stomach with a quart of normal saline solution to free it as much as possible from the offending septic material, and thus it is that these grave symptoms may sometimes cause death if all possible precaution is not used, as it had been used in the course of this serious trouble.

Another equally interesting case is one which had been seen and treated by three physicians prior to my seeing it:

I saw the case in consultation and treated it with Dr. S. Cohn, of this city. Prior to this the child had been intubated by several physicians, among them Dr. Goodman and Dr. L. Kohn, and had been seen by Dr. Weissberger. This child when I saw it had a tube within the larynx which was entirely too large, so that a great deal of trouble with dyspnœa arose directly from the tube. The first indication was to relieve the stenosis by removing the larger tube and placing a smaller one. Besides, a temperature of 105° appeared every evening, followed by a fall to 101° in the morning. This kept on for three consecutive weeks, although at the end of eight or nine days the temperature remained normal for three or four days. A careful examination of the lungs revealed a pneumonia, first on one side, and, after a resolution had set in, it was followed by the same condition of affairs on the other side. The pneumonia was evidently the result of "*Schluckpneumonie*," which is so often caused by swallowing fluids which enter the trachea and lungs through the tube instead of going to the œsophagus and stomach. In order to guard against a repetition of this in this case, and besides to give the child the very best opportunity to recover, we resorted to rectal feeding and did not give anything by the mouth for a number of days. The child's strength remained well; it did not lose flesh, and seemed, but for the anæmic condition following the diphtheria, to get well, and is well to-day, which is about three months since the commencement of the treatment. The urine in this case did not show any casts, but contained varying quantities of albumin, sometimes slight traces, at other times almost fifty per cent. of the volume, so that, although a distinct nephritis existed, it passed off without further treatment. A peculiar condition of affairs was noticed the second week of the treatment of this case. The temperature, which had remained normal for two days, suddenly rose to 105°. The stomach was in good condition; there was no other reason for a febrile condition, excepting the possibility of a pulmonary complication. The question of an exanthematous eruption came up, but was dismissed, so that I decided to reinject the case with five cubic centimetres of Aronson's antitoxine. Within twelve hours after this injection, without any further treatment, the temperature went down to 101°, and the following day, thirty hours after the injection, the temperature was normal, so much so that Dr. Cohn and myself were led to believe that we were dealing with an extensive diphtheritic, membranous laryngo-tracheitis, for about thirty hours after this injection a large cast was coughed out which was about four inches long, which showed a complete extension of the disease from the larynx to the trachea and finally the bronchial tubes into the smaller bronchi.

Where a febrile condition has existed for more than a week following the injection of antitoxine in a given case of diphtheria, where the urine is quite free from albumin, where there is no history of an exposure to an exanthematous eruption, if all further factors, such as gastritis and other diseases, are wanting, and there is no really assignable cause for the existence of the fever, it has been my rule to suspect an extension of this pseudo-membranous condition downward, especially so where the larynx had been involved primarily, and the more so when we hear on auscultation some moist râles or dry râles and other signs pointing to the existence of a bronchitis without distinct manifestations of the disease. In such cases I have given the most benefit by resorting to a second injection of antitoxine in the same dose as I commenced—namely, five cubic centimetres. In order to illustrate the fact that antitoxine can be used to advantage in all forms of diphtheritic processes, I desire to record the following case:

A child was taken down with a severe form of diphtheritic croup; was attended by a physician without antitoxine and died. In the same house another child came down with diphtheria about a week later. I was called on the second day of the disease, and but for a slight drowsy condition and also a small membranous deposit on the pharynx I should have called this a mild case of diphtheritic pharyngitis. The temperature did not go beyond 100° and the other factors in this case were so mild as merely to mark it as an ordinary case of mild diphtheria. The child was well as far as we could determine in about a week after the commencement of the treatment, which I have heretofore detailed. It was then that the trouble in this family commenced. The mother of this child had been in puerperium since the second day after the commencement of her child's diphtheria. From that time it was noticeable that she had had fever. Her midwife used all necessary precautions, such as antiseptic irrigations and all modern dressings, but the temperature persisted, and the question of retention of placenta or other *débris* post partum came up. She finally sent for me to examine this woman. I was surprised to find a large, yellowish-white, croupous deposit covering the external genitals as far as I could see, probably in all covering three or four inches of mucous membrane. The temperature of the woman was 105°, she was constantly drowsy, complained of a burning pain in and around the genitals, of excessive thirst, and otherwise had no further symptoms. On questioning her, I found that her child, four years of age, which had suffered with diphtheria, had slept on her bed every night during his illness, as she thought she could be of some service in nursing him. It was easy, therefore, to associate her infected condition with that of her diseased child. The midwife had given her several doses of quinine on the day previous, and but for a buzzing noise in her ears it did not seem to relieve her condition. I ordered an enema of soap and warm water to clear her bowel; I used locally a hot solution of 1-to-5,000 bichloride of mercury by soaking weak iodoform gauze in this solution and changed this antiseptic every few hours, and gave her an injection of ten cubic centimetres of Aronson's antitoxine. What had been one large, solid mass on the day of injection appeared to be a shriveled, loose mass of suppurating tissue on the following day. The temperature, which at the time of the injection had been 105°, came down the following morning to 102·4°, and two days after the injection it came down to 100·2°. Instead of the croupous deposit, there was a large amount of pus flowing constantly from the external genitals, so that it appeared as though an abscess involving the whole of the external and internal genital tract had been opened. From this time forward nothing of any importance appeared; the patient made a complete recovery in about two weeks although her temperature came down to normal on the fifth day after the injection. The further treatment of this case consisted of local antiseptic dressings of iodoform gauze, and, as I found a large ulceration involving the perinæum, I sent the case to the Post-graduate Hospital for operation. The patient was operated on and is entirely well.

The second case of this kind occurred in a patient of Dr. S. Cohn of this city. According to the doctor, he changed his clothes, bathed, and used all necessary antiseptic precautions in going from one patient's house to the other. Still, for some unexplained reason, the patient in puerperium contracted fever, and, as he was exceedingly careful of the condition, he suspected at once the possibility of an infection from an outside source. When I was called in consultation I found the patient suffering from very high fever, constant headaches, some pain in the abdomen, but no distinct evidence of any croupous or diphtheritic deposits. That it was a case of septic peritonitis we easily agreed, and it was determined to try the efficacy of antitoxine in this case. I therefore injected five cubic centimetres into the right abdominal region and gave the patient a placebo. The attending physician had previously used all necessary intrauterine irrigations and used all careful details in the treatment of this puerperal stage, so that there could have been nothing but possibly an infection through some unexplained reason. On the following day the temperature had gone down two degrees, so that we were so much encouraged by this that the doctor asked me to give a second injection of antitoxine. Following this second injection the temperature went down to 100°, and but for slight therapeutic measures nothing required looking after. Dr. Cohn attended to all the other details of her treatment and, besides giving pills containing inspissated Warburg's tincture, employed nothing but careful dieting.

It was primarily a case in which the septic elements were destroyed by the introduction of antitoxine into the system, and if, as the two previous cases just cited show, any step toward the amelioration of the septic condition in the puerperal stage—and I think it is well worth considering—I believe that I am justified in saying that these two patients were saved directly by the introduction of this new therapeutic measure; and although I am not willing to say that all patients with puerperal fever can and will get well by the treatment just detailed, I am confident that possibly some of the patients that are left to the ordinary means of to-day, to die of septic diseases, can be cured if this treatment is tried. I repeat, however, that my experience in septic puerperal diseases is limited to two cases, both of which were successfully treated.

An equally instructive case was one similar to one that I reported last September at the meeting of the Post-graduate Clinical Society:

A child, ten days old, had had extensive sloughing of the umbilical cord. A child in the same family was sick with diphtheria for a number of days. The physician in attendance was rather puzzled at the peculiar state of affairs of the navel. It was in a highly inflamed condition, the tissues surrounding the umbilical cord were covered with large membranous deposits for several inches. When I saw the child in consultation, I at once associated this factor with the child that was sick with diphtheria, and told the attending physician that I believed it to be a case of diphtheritic omphalitis. When I saw the case the child was seventeen days old. Iodol was sprinkled over the external surface, also the ordinary lotio nigra had been used with little or no effect. The temperature of the child was 102°, and all in all the child appeared to be dying. It refused the breast, and was constantly crying; had had several movements of the bowels lately; peevish; had his legs flexed on his abdomen. We decided that as the child had probably been infected, an injection of antitoxine might do some good. I injected in this case three cubic centimetres of Aronson's antitoxine in the interscapular region and applied lead water locally. Whether the antitoxine or the lead water did the most good I am not prepared to say, but the very fact that calomel and limewater had been used for several days prior to the commencement of this treatment without any avail points to the fact that the antitoxine must have had some direct specific effect, for two days following the injection large deposits, which consisted of pseudo-membranes, sloughed away, and a culture made from a piece of this pseudo-membrane showed the presence of Klebs-Loeffler bacilli. It was then more than ever that I believed that I was dealing with this true form of diphtheritic omphalitis. In this same child, following the disappearance of the omphalitis, which lasted in all eleven days after the commencement of the injection, a severe diphtheritic conjunctivitis was set up, owing most likely to the carelessness with which the nurse handled the baby and the probability of the carrying of some of the infected material of the inflamed navel to the eyes. In fact, the nurse admitted having used the same towel to wash the eyes and the eyelids that she used to dry the umbilicus, so that we had here again the direct transmission from the umbilicus to the conjunctival mucous membrane.

I could continue to report other interesting cases, but desire to confine myself to the fact that not only necessarily must a diphtheria be located in the nose, in the throat, on the tonsils, on the larynx, or even in the trachea, but that all diphtheritic processes involving, as in the case reported above, cutaneous diphtheria, conjunctival diphtheria, omphalitis, diphtheria of the external genitals—in fact, in all processes in which I have suspected a croupous or diphtheritic foundation, I have used antitoxine with most positive results, and I believe that some of our patients with septicæmia that died from external cutaneous diphtheria could have been saved by the timely injection of a sufficient quantity of proper antitoxine.

One word more as to the strength of the antitoxine.

Strength of Antitoxine.—Heretofore antitoxine has been prepared and put up in bottles of various sizes, the one being known as antitoxine to confer immunity, and really a prophylactic antitoxine, which was a very weak therapeutic agent in comparison with the antitoxine that was put up in larger bottles for healing purposes only. A very wise plan has, however, been adopted abroad of putting up the antitoxine in phials containing five cubic centimetres only. This quantity is sufficient for an ordinary healing dose in a mild as well as in a malignant case of diphtheria; but if a case shows no alleviation of its most urgent symptoms within the first twenty-four to thirty-six hours following this injection, then a wise plan is to inject the same quantity on the day following the first injection. The most important change that has transpired within the last few months in the manufacture of the antitoxine is that the German Government will not permit this therapeutic agent to appear in the market without giving it its official seal, after having tested its strength and the quantity of normal antitoxine units. It is therefore very pleasant to know that the firm of Schering & Glatz have only one kind of antitoxine, which should be used in the dose above mentioned. In order that I may be properly understood, I should like to state that a child two years old can be infected and have as much septic matter in its system as an adult from a given patch of diphtheria. In fact, the child, being more prone to the action of this diphtheritic poison, shows more manifestations of the disease than an adult, and hence it is that the same dose of five cubic centimetres can be injected with impunity into an infant as we would inject into an adult within the same time and in the same locality. I should like to emphasize this point, owing to the large number of questions that have been put to me by various correspondents since the publication of various papers on antitoxine by me.

The Effects of Frost and Heat.—A series of very interesting experiments have been conducted by Dr. Hans Aronson, of Berlin, to determine the efficacy of antitoxine after having been subjected to a freezing temperature, owing to numerous inquiries following a severe spell of cold weather during last winter. Fortunately, according to Aronson, the antitoxine does not lose any of its therapeutic value by being subjected to low temperatures far below the freezing point. This is very important for us to know, especially in the smaller towns, where a supply of antitoxine is not so near at hand, and where physicians have usually taken some antitoxine and kept it as a precautionary measure. While speaking of the effect of cold, a word about the action of very warm temperature is also not amiss. Antitoxine can stand very high temperature without being decomposed; this has also been conclusively proved by experiments, so that we have neither to fear from either the extremes of heat or cold as endangering the value of this drug.

According to the statement of Dr. Hans Aronson, the antitoxine sent to this country by the Schering Chemical Works, of Berlin, manufactured in their bacteriological laboratory under his supervision, will keep at least a year, and specimens of longer time than this have been tested and found efficacious; but I believe that an antitoxine that will retain its active power for a year is all that we can desire.

It is my earnest hope that the good results attained by me in the management of some of the most malignant cases of diphtheria that I have known since I have been in practice shall be also repeated by those colleagues who have hitherto been skeptical in the use of this valuable remedy, and I believe that the large number of consultations that I have hitherto reported have been only due to the fact that most physicians still believe the antitoxine treatment to be in its experimental stage. A careful review, however, of this paper will prove the fact that my cases have not been selected, but that I have usually been called especially in those cases which have been kindly referred to me by physicians in this and the neighboring cities, and have been cases in which antitoxine was only called for as a last resort and where most frequently all the customary treatments of diphtheria hitherto in vogue had been unsuccessfully applied, so that I may candidly say that the complications arising in the course of some of my cases have been rather due to a long-continued disease which has really undermined the whole organism of the patient and saturated it with the septic elements of the diphtheria and its products, and that while we were really called to a so-called case of diphtheria it was in most cases a long-continued diphtheritic septicæmia that required skillful management. Such brilliant results as I have observed from combining antitoxine with intubation and antitoxine with tracheotomy have never hitherto been attained by me in the mildest form of epidemic and with the strongest patient before me.

. 187 Second Avenue.

CATARRHAL DYSPEPSIA.

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Anatomical Points.—The stomach when isolated bears a faint resemblance to the water bottles seen on the streets of Cairo. It is sandwiched between the lungs, liver, spleen, and pancreas; above, the œsophagus acts as a conductor for masticated food and frequent mouthfuls of saliva; below is the long-drawn out tail end of the digestive apparatus. The stomach is a container, or scrap bag, into which the animal empties whatever tastes good. Its mucous membrane gets the credit very often of being the stomach, but the truth is that the muscular structure plays an important functional rôle. Inflammations, rheumatism, malignant disease attack muscular structure anywhere, and are liable to cause dyspepsia by crippling the organ. The usual symptom of rheumatism is pain. Urinary sediment, without this evidence of pressure on the nervous mechanism, rarely causes a patient to get rheumatic treatment, although its presence should be traceable in the composition of the secretion from the mucous surface. Test meals, the electric light, and incision will probably make the stomach give up more of its secrets in the future. Chemical examination of the first water siphoned off during lavage ought to be more often resorted to by the specialist.

The principal function of the stomach is to secrete gastric juice. Gastric glands are little chemical laboratories lined with the same velvety epithelium which covers the surface turned to food. Whatever affects the epithelium in one part of the stomach easily communicates with the very bottoms of these glands. An impression transmitted to the gland touches the cell life within. The terminal filaments thrill with vigor, or stand still in mute agony, according to the kind of impulse conveyed. Hot water has an immediate but temporary tonic effect. Ice-water has a temporary paralyzing effect. If the quantity of ice-water is not too large for the stomach to warm to the body temperature, the paralysis is gently thawed out of the glands and their function is not disturbed to any appreciable extent. Gluttony may tire out the stomach on the same principle that too much exercise will tire the cerebral centres or the gastrocnemius. Normal digestion requires a certain percentage of the digestive ferment and hydrochloric acid. It is the business of the gastric glands to furnish juice with these constituents in it. Protoplasm must be within reach. Each gland must have the privilege of levying tribute on the blood for what it wants. If there is in the blood an artificial element which makes it more difficult than usual to make the gland's selective action manifest, there is a stoppage of the flow of secretion from the gland mouth. Our art teaches us to make use of ergot in this way. Emotional disturbances may stop the function in a different way. Some emetics will untie the knots which have thus been put into the vaso-motor strings. The force that makes gastric juice out of the same primary material which yields bile in another situation is the same that makes the rose different from asafœtida. The difference is as plain as the giraffe's neck, but chemistry runs against a stone wall when it attempts to penetrate the mystery. When the observer gets into the cell with his microscope, all he can see, even when his imagination is magnified a good many diameters, is a ghost.

In health gastric juice is poured out liberally. Food which comes into the stomach must be macerated in this juice. A supply of liquid is usually thought to aid digestion by favoring rapid contact of the mass with the digestive ferment. The process in its result is analogous to boiling. It is the modern doctrine that the stomach is intended to be the market basket for the body. Here the mass of food is mixed with gastric juice and churned into the right consistence to be forwarded to the intestinal canal, where absorption takes place. But the most careful scrutiny does not reveal any difference in the veil of flesh which separates the blood from its nourishment. In the stomach the glands are made with the same surpassing delicacy as in the intestine; not even water is absorbed in the stomach, so theory says. Is it theory or fact which confronts the country practitioner in the case of a cup of coffee? A sense of exhilaration follows a draught of the caffeine containing beverage. Hot water will not have the same effect, so that the transmission of heat does not explain the phenomenon. Caffeine is a stimulant to the heart and nervous system, but to act it must reach the central system as well as the ganglionic relay stations. Once there, an order for increased peristaltic motion is transmitted.

A stomach is an accommodating organ. It grows rapidly from birth toward adult life. After the body has attained full development, the stomach ought to come to a standstill, so far as size is concerned. It is elastic, and is often enormously distended. Chronic distention leads to hypertrophy. Distention of the stomach, of course, leads to enlargement of the abdomen. Increase of connective tissue results, rather than multiplication of glands, because the original plan of the stomach contemplated a certain number of organs. If an exception was to be made in favor of a gastric gland, what would hinder the observer from expecting to find two livers or thymuses occasionally?

Too much liquid causes "drink dyspepsia" (?), due to dilatation and to attenuation of gastric juice. The anatomy of gastric catarrh has a sort of sliding scale. There may be catarrh caused by dilatation, also from the irritation of malignant growths, colds, neuralgia, alcohol, bacteria, etc.

Influences of Colds.—Cold is a powerful factor in the causation of catarrhal dyspepsia in predisposed individuals. The result of applied cold may show itself in this way: Suppose the patient has been sitting still in a room whose temperature is so far below that of the body that the body does not equalize the difference, a gradual loss of body heat is the result. The blood circulating near the surface is chilled and is then carried toward the deeper structures. If this condition lasts only temporarily, no ill effects are produced; but if the cold continues to operate for several hours without exercise being taken, there will be pronounced effects visible. The joints will be stiff. Nervous impulses can not be transmitted to muscles and organs normally in a lower temperature than 98·5°. The mucous membranes feel the changed condition of affairs. At first comes the familiar dryness of the throat and mouth and nose, which increases to pronounced soreness, harsh breathing, and stuffed feeling. What has happened in vaso-motor contraction? The gland mouths are puckered, and a cell difficulty has also been caused by the cold. Blood below the normal temperature will not circulate as rapidly as it should. If healthy blood aids its onward progress by an irritant action on the vessel surface, it is now interfered with; muscular contraction in the vessels gets below par. The heart is depressed through its nerve supply. There is a slowing or absolute suspension of the function of selection in the gland cells, which inhibits the manufacture of mucus. The indication in this early stage of taking cold would seem to be the application of heat and moisture to the mucous membranes, especially to the mouth, stomach, and intestines, for a stimulating action to the vaso-motor system. It is necessary to produce relaxation and add to the supply of body heat. The heat will be transmitted to the entire body. The heart will soon feel the impulse, and the wheels of the circulatory apparatus begin to spin.

Now comes another stage in the process of taking cold —the stage of supersecretion. Cessation of secretory activity for a period has allowed the stock of material to accumulate in the blood. Increased heart action hurries this material to the glands. Recovery from the partial paresis caused by the cold is followed by reaction. Vaso-motor control is temporarily relaxed, and from the glands an unusual quantity of secretion flows. This unwonted activity, of course, brings more blood to the mucous membranes, causing first hyperæmia, which means still more mucus, and, if the process remains unchecked, real inflammation. In this way a pneumonia or a pleurisy may be sometimes explained, or, for that matter, a gastric catarrh. The condition of the stomach has an effect on the process. If the stomach should be full the initial stage of the cold retards digestion. The second stage, when supersecretion comes on, will encourage the propulsion of the mass of illy digested or macerated food into the intestinal canal. If the same secretory activity prevails along the whole route, perfect digestion is impossible, and we have a catarrhal diarrhœa. Particles of undigested food are to be found in the excreta. The usual course of events sees calomel and castor oil forced into the patient. These remedies increase the flow of blood serum by stimulating and irritating the mucous surfaces. The channel is flushed out and what remains of undigested food is carried off.

Then succeeds another reactionary stage. There must be repair of the damage done to the blood by robbing it of its watery constituents. This repair is partially due to the already overworked glandular system. Patients are now usually thirsty. Liquids, such as water, milk, and aromatic drinks, are most grateful. The glands are not in a condition to tolerate solid food, and until the damage to the blood is repaired there could not be normal digestion. So, while the process of repair goes on, the patient thinks he is constipated, but it is the kind of trouble suitable for the faith-cure treatment. It adjusts itself as soon as half rations are doubled. The muscular structure of the stomach may be influenced by the processes mentioned. If an inflammatory action has been set up by the catarrh there has been exudation of fibrin and other elements into the tissues. The presence of these products outside the blood-vessels means œdema and irritation of the organ. Circulation is more or less disarranged. Elements foreign to gastric juice get into it by endosmosis and exosmosis. The food subjected to a gastric secretion of abnormal constituency is not properly digested. Catarrhal processes may become complex, and the repair of even the result of a cold be very difficult while the stomach is made to do its work three times a day.

Alcoholic Catarrh.—Organic specimens preserved in alcohol become indurated. The same effect is produced upon some of the organs of the human body by the same cause. Even the conscience feels the hardening process. The delicate structure of the cerebrum, which is supposed to be the abode of the soul, finds its function so embarrassed by alcoholic saturation that it gives its character to its tenant, which henceforth gets the reputation of being a tough customer. How much alcohol it takes to set up a gastric catarrh varies with the consumer. It usually happens that one spree furnishes the necessary material. When the inebriate comes to himself he finds that he has a tender abdomen, irritable bladder, an intestinal canal which feels as if it had been scoured with sandpaper, a nervous system which has been pounded to a jelly, and a stomach which refuses food. "Water brash," "heartburn," "sour stomach," are popular names for the complaint. There is a tendency toward contraction which expels the contents through the œsophagus. The stomach has no choice in the matter of vomiting. If the pyloric orifice furnishes an outlet for the irritating substances there may be nausea following violent motion of the stomach.

It is probable that the ordinary history of vomiting is this: The mucous membrane is unable to furnish healthy gastric juice. No digestion would be possible at the time anyway, because the inflamed surface rebels at the touch of any substance. The only method of expelling the offending matter is by contraction. The pyloric end of the duodenum is soon full of, partially digested food. When nothing more can be crowded into the duodenum the mass is forced into the œsophagus. There may be a vomiting into the intestinal canal, which is a sort of right-handed result of catarrh. Frequently the abdominal disturbances blamed to the dyspepsia are caused in this way. Left-handed vomiting, the most unnatural method of getting rid of irritating material, is the ordinary stomach-to-mouth variety.

Alcohol first irritates the mucous membrane, then dulls the sharp edge of the terminal nerve filaments. Transmission of reflex impulses, which would keep the vasomotor system on guard at the glands, is impossible. The glands relax. Then there is nothing to hinder the flow of secretion into the stomach cavity. The unsteadiness caused by alcohol is analogous to seasickness. If it were not for the analgesic effect of the alcohol distributed throughout the body the patient would vomit when he got drunk. The catarrhal element is in both diseases. The flow of mucus, encouraged by the alcohol, leads to an accumulation in the digestive apparatus of too much liquid. Some of this abundant secretion is reabsorbed, and it probably contains dead cells and organic detritus which act as an emetic to the central nervous system. Such material would have no food value to the blood, and its presence would at least cause degeneration in the life-giving current. Poor nourishment of tissues would bring on emaciation. But the alcohol will ward off some of those evils by its power of benumbing the nerves which connect the brain and digestive system. If the drug did not wear a false face it would be recognized as a poison. Liquid loaded with material unfit for nutrition irritates the intestinal canal. Circulatory excitement increases peristaltic motion. Catarrhal discharges *per rectum* are a common effect of inebriety. The inflammatory symptoms need time and rest if they are to subside. After the use of intoxicating drinks has been stopped there remains this catarrhal condition of the mucous membrane.

When the alcohol is eliminated the individual is still suffering from the effects of poison. Every organ suffers, and it is plainly to be seen that here is the beginning of such serious maladies as Bright's disease sometimes. From the first spree the individual usually recovers easily. It is a mistake to suppose that it is not dangerous to expose some of the delicate organs of the body to the wild-cat circulation of a big drunk. There is occasionally inherited weakness of mind to explain the drunkard's tendency. The weak mind is only the barometer for the body. A tuberculous diathesis, inherited syphilis, moral obliquity in the ancestral stock, may have sapped the vitals unknown to the victim. His spree may be the torpedo exploded in the constitution, doing serious damage, such as rupture of renal structures, which will show itself as blood and deposits in the urine. Lapses from sobriety are looked upon as only white sins, but if they become common there is gradually produced a thickened, indurated, œdematous mucous membrane, beneath which is a chronically infiltrated muscular tissue. Blood-vessels are engorged; they are in a varicose condition; secretory derangement is permanent if the neuritis of the filaments of the peripheral nerves continues.

The "whisky cures" touch the tap root of this evil with their injections of strychnine and atropine. Strychnine will gradually restore tone to the nervous system and is a physiologic paradox to alcohol. Atropine checks the leakage from the glands. The loss of so much of the liquid constituents of the blood through the glands gives the inebriate, even when not drinking, that tired feeling. To escape from the resulting despondency, and to relieve the gnawing sensation caused by the neuritis localized in the stomach, alcohol is resorted to again and again. After several weeks' treatment with these drugs, the stomach approaches to its healthy condition. It can digest food. Appetite comes back, and refreshing sleep becomes possible. Permanent recovery, of course, is a question of will power, but the treatment is not a complete fraud, as is often claimed for it.

Bacteria.—The mouth, throat, and nose harbor swarms of micro-parasites. It is easy for germs of any description to start on a round trip through the body *via* the stomach. They have a perpetual pass. If these breeders of mischief find the stomach in a normal condition, the gastric juice may make infinitesimal mince-meat out of them. Animal food, if there is enough of it supplied by the germs, may be of value in this shape as well as any other. Chemistry would reveal the fact that in the benign germs are to be found the same elements which compose fresh food of other kinds. But if there is a morbid process at work in the stomach, or if the germs are malignant, and possess latent possibilities in their heads, like matches, then developments must be awaited with interest. Dead cells, detritus, hybrid products, due to imperfect workmanship in sick tissues, are to be found in the stomach contents occasionally. Such a nidus is just what some kinds of bacteria need to establish colonies in abundance. As multimillions of the germs come into existence, they branch out, seeking more worlds to conquer. The germ itself may not find its way into the circulation, but its toxine is in the nutriment, ready to be absorbed. The network of absorbents may make wry faces at being compelled to furnish contaminated nourishment to the tissues, but what are they going to do about it? The glandular system may rebel, mucus may be poured out like water, and some of the poisonous material neutralized or digested and washed away in the shape of a diarrhœa. Such catarrhal discharges may be the very best medical treatment possible, and to treat it with astringents, opiates, etc., is to take the digestive bull by the wrong horns.

The contract to dispose of all such poisonous matter in this way, or any other, is too large a job for Nature. In the blood grave changes may be produced. Every tissue in the body must feed on the contaminated blood. Muscular tissues, for instance, feel the effect, and begin to complain when motion and locomotion are necessary. The nervous mechanism in general loses its nip, as we say in

Montana. Animal spirits are at a discount. Neuralgias, flying pains, and headaches show themselves. Anæmia and various disorders caused by starved and poisoned blood are common. The color of a skin, where bacterial poisoning has brought on gastric catarrh, is typical. Fermentation of blood is one of the common results. Distention of the abdominal cavity by gas is responsible for all kinds of symptoms from plain bellyache to the most *recherché* hysteria. There is liable to be pain; uneasiness from the crown of the head to the sole of the foot; palpitation; insomnia; aches and pains of high and low degree. Interference with the functions of the abdominal organs, especially, is frequent. To get rid of the gas is a knotty problem. Sometimes there is a sudden distention of the abdomen to the thirty-third degree. It seems as if this was caused by simultaneous relaxation of all the structures interested. The pressure of the gas has paralyzed the nerves temporarily, and normal muscular resistance has lost its grip. The mucous membrane is put on the stretch to such an extent that it may afterward be sore and hyperæmic. Too much blood means too much secretion. Putrefactive changes occur where bacterial changes are going on. Nausea is an ordinary evidence of this chemical process. Acid eructations take place. The tongue and teeth are covered with sordes and the breath is foul. Appetite for food is below par. To enjoy taking food the entire alimentary canal ought to be in an aseptic condition. Even savage tribes have the rudiments of medical philosophy, and endeavor to keep the teeth clean.

A Word about Treatment.—The materia medica has been prescribed piecemeal for this most interesting morbid condition, and it is a double-decker so far as interest is concerned—the first deck being the patient's part, and the second being occupied by the medical man. From his standpoint we wish to view the landscape. First, a cardinal principle of treatment is this: People eat too much. Periodic fasts are good prescriptions for the average human being. Systematic starvation will benefit many cases. There is so much tough mucus adhering to the gastric surface that the peptic glands are coated with a sort of natural collodion, which seriously interferes with digestion. An early indication is to get rid of this mucus. Before a meal, but not too long before, so as to give it a chance to be replaced, lavage should be resorted to. A fair field for digestive activity is thus presented. When this mucus sticks closer than a brother to the mucous membrane, the secretion of gastric juice can not reach the food. The presence of the food in the stomach is a stimulant to the glands. The nervous mechanism gives the signal for the wheels of digestion to revolve, but there is an obstruction at the very mouth of the gland. An engorgement follows. Pressure on the delicate tissues and nerves results. Pain manifests itself. Extra violent efforts are made by the stomach to bring the gastric juice into contact with the food by reason of the extra supply of blood which the disturbance calls forth. Before enough has broken through the barrier formed by the mucus, the patient may have had to endure the torments of the damned, and is ready to say, "I will eat no more while the world stands." Next to starvation and lavage is hot water, swallowed immediately before eating. The object to be obtained is a solution of the tenacious mucus; and, by the way, it requires actual eyesight to understand how sticky it really is.

A stomach put into water in a jar can be studied at leisure. That is, it can be if some salicylic acid has been added, and the jar hermetically sealed; otherwise, the odor seems to have the faculty of penetrating glass with the ease of pickled rattlesnake. It requires a large quantity of hot water to effect this purpose, because the heat rapidly passes to other parts of the body. It has another advantage in its stimulating property to the secretory apparatus. A desideratum after giving the hot water would be some sort of a machine to rattle the stomach around. To be well shaken when taken, would be practical directions if they could be literally carried out.

The administration of strychnine and atropine for the purpose of controlling the catarrhal process is a scientific proposition. Simon Baruch, of New York, is the apostle of hydrotherapy. Some of the success of the treatment must be due to the man. Water handled with consummate skill will work wonders. It owes its efficacy to its tonic effect on the nervous system. What will reach the central station by another route might be equally powerful for good. Strychnine undoubtedly will lift up the standard of performance of function in the various organs, at least temporarily. It does so by furnishing extra power. But power must not depend on a drug for any length of time. At the same time that respiration and the heart are encouraged by the strychnine, it should be the aim to put bit and bridle on the mucous membrane by prescribing atropine. Simple tonic treatment with strychnine will send the blood in a swifter stream throughout the body. Its action is not a primary shock, succeeded by a secondary reaction and glow, but is all glow from the first jump. The effect of strychnine would be to set the circulatory apparatus to buzzing in the stomach tissue. More of the catarrhal product than usual might be poured out. The atropine will cinch the gland so that it can not manufacture enough to keep up the drain. Elements which have been finding an outlet in the gastric mucous membrane will be diverted to some other habit. An abnormal process which is interfered with by a substitute that comes nearer to Nature is not hard to break up. When digestion and appetite improve sufficiently to bring rest and nervous tone back to the body, it is an indication that atropine has had the expected result on the arterioles, the peripheral nerves, and the glands. Its use should be continued in a descending scale, so that the two drugs together may have the chance to take out of the connective tissue the products of chronic inflammation. Reduced blood supply will cause the material to melt away by absorption. A new stock will not be on hand to take its place, and so the mucous membrane and the muscular tissue will resume their normal condition. Nervous dyspepsia is often benefited by the same treatment as is skeletoned here. It seems that the American stomach has contracted the prevailing tendency to rush things, and has been caught in the act of hurrying digestion. Where lavage or the stomach pump shows to an astonished patient that instead of his stomach being full of food, whose digestion is suffering from arrested development, it really is empty, he may still feel the pangs of digestion. Physicians may cry "Peace, peace, but there is no peace." The fact is, the process has been transferred to the intestines, beyond the reach of our aids to diagnosis. If we could penetrate the human sausage strings, we should find that the trouble was due to hasty performance of the stomach's part of alimentation.

FERRATIN:
ITS VALUE AS A RECONSTRUCTIVE.

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The use of a drug in a single case could not be sufficient to establish its value, except that in the particular case the test may have peculiar merits. In that which follows, the drug in question was put in such apposition to other ferruginous preparations that results could be comparatively estimated.

A married woman of thirty-seven years; mother of eight children, the youngest two months old. Two years and a half ago, while she was suffering for a considerable time from a straining cough, which she had neglected, she showed physical signs of aneurysmal dilatation of the right carotid—thrill, loud murmur, and slight tumor at the base of the neck. She had frequent syncopal attacks and was depressed in strength and spirits. During most of her married life she had frequently been quite anæmic, and as a consequence neuralgic, and was accordingly often put on one or another preparation of iron, to which there was generally a somewhat slow response, although always ultimate improvement. After the development of the symptoms above described, she was forbidden all exercise, except a little moving about her room (being first removed to the country), was ordered an exclusive and limited milk diet, and was given potassium iodide in ten-grain doses, three times a day. She was counseled to spend nearly the whole of the twenty-four hours in bed and to refrain almost entirely from entertaining her friends. In the cource of the summer she improved considerably so as to have no further sinking spells. In the fall she became pregnant, and at the end of three months aborted with great loss of blood, her condition being extremely perilous, and necessitating hypodermics of strychnine, digitalis, whisky, and ergot. She, however, rallied, but a little later developed two large abscesses on the leg, which extensively undermined the muscles and prostrated her greatly. After a tedious convalescence, she again became pregnant nearly a year ago and went to full term, without any specially untoward symptoms, the physical signs of the vascular lesion of course remaining permanent. Her lying-in was not in any respect especially significant, the labor being easy, the loss of blood not inordinate, and the depression, though decided, not extreme. She gained strength rapidly till in the second week, when she began to show decided signs of anæmia. She was put on the use of tinct. ferri chloridi., acid. phosph. dil., āā ♏xv, t. i. d., and continued on this for some weeks. Though not specially losing ground, she gained but little, and the breast milk began to lessen so much that she was on the point of substituting artificial feeding. Just at this time a sample of ferratin, enough for about ten days' use, was placed in my hands. I at once started her on it, a gramme daily, and in the course of five days the improvement was so decided that the anæmia and weakness were disappearing and the supply of milk returning.

Under the continued use of the drug for about four weeks, she is now in as good a state of vigor and health as she has at any time been since the first onset of the symptoms, which began two years and a half ago. I should be inclined to say better, but such an expression might expose me to an accusation of prejudice in favor of a new drug. I am, however, convinced that in so short a time no other single medicine could have done more, if as much, for her, as ferratin has done.

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HOW TO TREAT A COUGH.

By EDWIN GEER, M. D.,
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Unfortunately it has not been demonstrated that we have anything like a specific for the more severe diseases of the chest, as phthisis or pneumonia. There are some good reasons for believing, however, that we may soon be as successful in treating these diseases as we are now successful with diphtheria under its new treatment.

The knowledge of the cause of phthisis enables us to detect that disease in its very earliest stages, while the physical signs of pneumonia are sufficiently distinct to tell us of its presence. With two such formidable diseases to treat, the question of controlling the cough may be an altogether minor one, at least for a time. But we have to remember that for every one of these cases we have a score or more of the lighter affections of the chest. We may have superior ability in directing a case of phthisis, yet we signally fail in the eyes of the laity if we can not speedily master a hacking cough.

The object of this brief paper is not to try to teach my colleagues how to treat a cough, but simply to state how I do it, what good results I get, and to call their attention to those lighter affections of the throat and chest the principal symptom of which is an annoying cough, for which alone we are often consulted. The patient may fear an approaching pneumonia, or be anxious because of a bad family history, or the cough may cause loss of sleep and detention from business. What shall we do for these coughs? It has been my custom for some time to treat each of the following conditions after this general plan: If constipation is present, which is generally the case, I find that small doses of calomel and soda open the bowels freely, and if they do not, I follow them with a saline purgative; then I give the following:

℞ Antikamnia and codeine tablets, No. xxx.
Sig.: One tablet once every four hours.

The above tablet contains four grains and three quarters of antikamnia and a quarter of a grain of sulphate of codeine, and is given for the following reasons: The antikamnia has a marked influence over any febrile action, restores natural activity to the skin, and effectually controls any nervous element which may be in the case. The action of the codeine is equally beneficial, and in some respects enforces the action of its associate. The physiological action of codeine is known to be peculiar, in that it does not arrest secretion in the respiratory or intestinal tract, while it has marked power to control inflammation and irritation. It is not to be compared with morphine, which increases the dryness of the throat, thus often aggravating the condition, while its constipating effect is especially undesirable.

Irritable Cough.—The patient complains that he has a constant tickling in the larynx, which makes an equally constant desire to cough. Nothing else appears to be the matter, and if this cough were only removed our patient would be satisfied. He also complains that the more he coughs, so much the more irresistible does it become.

Hacking Cough.—This occurs both in children and in adults, and appears to be due to an irritated condition of the mucous membrane of the upper air-passages. The desire is not so strong as in the above mentioned variety, neither is the cough itself so severe.

Harassing, Irritative Cough.—This is one of the most stubborn coughs to relieve. The patient complains only of a harsh, hard, dry cough which begins the moment he lies down to rest and continues through the greater part of the night. During the day there is but little trouble and his hopes are raised only to find them all disappear when he again seeks rest. In these cases the same tablets are given more frequently, while slight counter-irritation over the upper chest, perhaps a hot foot bath before retiring, and some hot drink may be added.

Winter Cough.—Then again, we have the chronic cough of winter, which comes with persistent regularity with the beginning of the cold season. This is especially the case with elderly people, who often have a chronic bronchitis. Here again we have the two drugs indicated, as mentioned above.

Nervous Cough.—This is a cough which does not appear to have any physical cause whatever. It is aggravated by those conditions which irritate or excite the nervous system, as well as by those which weaken or debilitate it. The same tablets will control this irritability at once.

Excessive Coughing.—In cases of bronchitis or phthisis, the cough is often far in excess of an amount sufficient to free the lungs from mucus. The object here should be to reduce the force and frequency of the cough to only the necessary amount. This is easily accomplished with the tablets, without causing any disturbance of the digestive organs.

Acute Cough.—Lastly, we have the acute coughs, more or less severe, which accompany the acute inflammations of the upper air-passages, as in acute colds. In these cases we almost invariably find an increase in the pulse, elevation of temperature, dry skin, and a dry throat. The antikamnia has a marked influence over these conditions, insuring their prompt relief, while the codeine effectually controls the inflammation and irritation, exerting an action of its own and enforcing the action of its associate. I might also mention the cough which accompanies measles. This is brought under prompt control by the tablets, while the antikamnia exerts a marked influence for good over the disease itself.

In the treatment of a cough, I am fully aware, we are usually treating a symptom. But experience has demonstrated that in a great majority of these cases, when remedies are administered which show their effect by controlling the cough, they remove the other difficulties as well. In conclusion, I wish to say that whenever we desire to control a cough, without affecting the normal functions of the respiratory and digestive tract, I have found in both dispensary and private practice nothing better than the combination above referred to.

1533 BOLTON STREET.

KEROSENE IN SURGERY.

By A. SCHIRMAN, M. D.

I DESIRE to put on record the following therapeutic novelty to enrich the arsenal of surgical remedies:

In cases of wounds and ulcers of the trunk and of the limbs in persons of the poorer classes the treatment employed was, according to the pathological septic conditions, by the usual antiseptic methods; but I found that recovery progressed very slowly, on account of the fact that time and circumstances did not allow the patient to apply these preparations as often as necessary.

For this reason I determined to try some other substance as an antiseptic, and it occurred to me to try the effect of kerosene in these cases.

For this purpose, in cases of ulcers, especially atonic and indolent ulcers, I smeared them with commercial kerosene, either pure or diluted (from thirty-three to fifty per cent.) with alcohol, with a small camel's hair brush or with a piece of gauze soaked in the solution. Shortly after the application a burning sensation was felt, but it soon passed away.

The appearance and character of the ulcers showed a change for the better; the discharge gradually diminished, and in the course of from two to four weeks after *primam intentionem* the rapidly granulating surface formed a scar without any contraction of the surrounding parts. The advantages of the use of kerosene for such cases may be summarized as follows: It produces healing in a comparatively brief space of time; it is much more economical and is easily obtained; I have never found the wound to be complicated with any erysipelatous process; it does not produce constitutional poisoning through the wound by absorption as other antiseptics sometimes do; it has not the intolerable smell of some of the others which are now in use; and the formation of a cicatrix on the ulcers is rapidly developed. Kerosene, having a local irritating action on the wound, undoubtedly possesses also disinfecting properties for the remote surface as well as for the adjacent surface around the wound. This is of great value, for actual facts show that persons residing in the kerosene-oil districts are protected against ailments of an epidemic character, such as cholera, etc.

ANÆMIA:

ITS CAUSE AND TREATMENT WITH PEPTO-MANGAN (DR. GUDE'S).

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Anæmia is a disease that we find in all classes and conditions of the human family, females in excess, of every nation and clime, its victims made up as an average of childhood, youth, and old age.

Classification of Anæmias.—1. Simple anæmia, where both the hæmoglobin and the corpuscles are diminished.

2. Chlorosis, where we find the hæmoglobin diminished and the corpuscles normal.

3. Primary chlorosis or pernicious anæmia, where the corpuscles are diminished and the hæmoglobin is relatively increased. Perhaps it might be better stated by saying that the percentage of decrease of corpuscles is greater than that of the hæmoglobin, which latter may fall to twenty per cent.

The symptomatic varieties of anæmia may be due to many causes:

1. Hæmorrhage.
2. Pathological discharges, such as prolonged lactation, sexual excess, profuse menstruation or suppuration, albuminuria, diabetes, and watery diarrhœa.
3. Malignant growths.
4. Toxic and infective, such as carbonic-dioxide poisoning, from tea, tobacco, coffee, alcohol, tuberculosis, and syphilis.
5. Animal parasites.
6. Obstacles to taking food which are mechanical in their nature.
7. Dyspepsia.
8. Venous stasis in cardiac and pulmonary disease.
9. Impaired sanguinification in diseases of cytogenic organs, malaria, leucæmia, or Hodgkin's disease.
10. Fever.

Ætiology.—Predisposing causes:

1. Sex: females in excess.
2. Age: childhood, youth, and old age.
3. Constitution: those having a weak and irritable constitution.

Exciting Causes.—Deficient blood supply; want of light and air; excess or defect of body exercise; unusual states of temperature; increased expenditure of unoxidized material; menstruation or lactation; psychical influences; depressing emotions.

The symptomatology of anæmia may be divided into the dropsy, loss of body weight, and fever.

Alimentary.—Retching, vomiting, atonic dyspepsia, constipation, sometimes diarrhœa.

Circulatory.—Palpitation of the heart, faintness, præcordial distress, hiccough.

Respiratory.—Dyspnœa, slight cough without expectoration.

Genito-urinary.—Polyuria; variable menstruation; sexual torpidity.

The composition of the blood has recently received a very considerable attention. Gorup and Besanez state that the blood of man contains one part of iron to two hundred and thirty parts of the red blood-globules. C. Schmaltz, in his investigations, says: "The specific gravity of the human blood varied from 1·059 in the male to 1·056 in the female," and he also says the ingestion of a physiological solution of salt, a thousand cubic centimetres, had a very feeble and short influence on the circulation.

In anæmia and cancerous cachexia the specific gravity may fall to 1·030; it varies according to the amount of hæmoglobin it contains.

In serious disease of the stomach the mass of blood is diminished on account of inanition.

In phthisis and cardiac disease its density is increased, because of the slowing of the peripheral circulation.

Meyer and Pernou found that the iron in the liver cells of the fœtus was ten times as great in amount as in the grown animal, showing that it might be stored there to provide for future growth.

Jacobi injected iron into the blood-vessels of dogs and rabbits, finding that ten per cent. was excreted by the bowels, liver, and kidneys. Of that deposited, fifty per cent. was found in the liver, the rest in the spleen and kidneys, also walls of the intestines and other organs; it was all removed from the blood two or three hours after the administration.

The excess of iron stored in the liver may be looked upon as a physiological and not a pathological process.

In estimating the value for the increase of iron in the hæmoglobin, it is quite necessary that we do not trust entirely to the physical examination of the heart and blood-vessels, the color of the mucous membranes, and condition of the skin. We should have an exact means of measuring the hæmoglobin of the blood.

Richert, of Vienna, makes a hæmoglobinometer which is quite as accurate as any in ascertaining the amount of hæmoglobin contained in a given specimen of blood.

No doubt but what the future has in store many improved methods to thoroughly examine blood.

You will find, upon examination of blood taken from a case of anæmia, the hæmoglobin diminished, and, as the patient grows worse, or rather the anæmia progresses, next reaching a chlorotic state, we examine the blood again, and find the corpuscles diminishing.

Anæmia is the sneak thief of all diseases. How gradually it creeps through the system to weaken and debilitate, leaving vital energy more or less diminished!

How often we see cases of headache, impaired vision, neuralgia, pulmonary diseases, indigestion, constipation, loss of appetite, and a lack of energy in general, all of which originated as anæmia; and the suffering patient does not realize how gradually they slip along into these conditions, whereas, if taken in time, much suffering could have been avoided.

Let us now look and examine at what the post-mortem knife has revealed—a liver degenerated, enlarged to twice the normal size, the edges thickened and rounded, the surface smooth, the tissue touch firm, inelastic, more or less translucent and of a brownish-yellow color.

This degeneration usually commences in the walls of the intralobular blood-vessels, causing them to become thickened and translucent; the liver cells are squeezed by the thickening of the vessels, and may become atrophied, sometimes completely so; indeed, it has been stated by some observers that the liver cells may also become waxy; they not infrequently undergo fatty degeneration; the blood contained in the liver considerably diminished, nearly or entirely absent.

Now, then, we will examine the kidneys. Here we find the most common and yet most important form of kidney disease—a state of diffuse nephritis. The kidney varies in size, the capsule is opaque and more or less adherent, the surface is finely or coarsely nodular; in the tubes the epithelium is changed, especially in the tubes of the cortex, the walls are swollen, finely or coarsely granular or fatty, or completely broken down, or the seat of hyaline degeneration; the tubes containing cast matter, also blood, pus cells, and small, flat, nucleated; in places the tubes are denuded of epithelium, the walls thickened, or they may be the seat of waxy infiltration; in the stroma there is a new growth of connective tissue; this is usually found in patches about the Malpighian bodies and the blood vessels in the cortex; the walls of the arteries are thickened.

The next organ to examine, and not by any means least in importance—the heart. Here we find a transformation of the muscle fibres of the heart into fat, which has collected in the fibres. This degeneration is sometimes quite universal, but more frequently occurs in patches, and may lead to a thinning of the walls, or to rupture of the heart, or to inability to fulfill its functions, and is often the cause of sudden death. These conditions may be secondary to hypertrophy of the heart, to inflammation of the heart muscles or to pericarditis, to disturbances of the circulation in the coronary arteries by inflammation or atheroma, and very many times are due to a deteriorated condition of the blood.

In speaking upon the ætiology of anæmia, we may say that many times there is a deficient amount of proper food taken; the hygienic surroundings are unfavorable to good health; excessive work, improper rest, mental anxiety, prolonged and frequent nocturnal emissions, excessive nursing or excessive menstruation, chronic intestinal catarrh, Bright's disease, diabetes, and malaria.

To successfully treat anæmia it is necessary to fulfill the *indicatio causalis*—presupposing a consideration of the subjects mentioned.

The *indicatio morbi* brings up the consideration of food, which should be nourishing and easily digested, mostly nitrogenous; exercise in the open air, the amount of which should be somewhat regulated; the breaking off of bad habits, and treatment by remedies.

In recent times it has been observed that the hæmoglobin of the blood has increased after moderate bleeding. Dogiel, on the strength of experiments upon dogs, confirms the deductions of Scholz that moderate bleeding, say with ten or fifteen leeches, does not alter the arterial tension; but if this is repeated every three or four weeks the patient gains in weight and the number of blood-corpuscles is increased.

Vogt also found the hæmoglobin to be increased under similar circumstances.

Schubert treated a number of cases of chlorosis by bloodletting and hot baths. The venesection was at the rate of seven to fifteen grains to the pound of body weight each bleeding. The patient was kept in bed from twenty-four to forty-eight hours after the operation, and this treatment was repeated once or twice each year.

Treatment with laxatives has at times been followed with much success.

Hamilton says that if he were compelled to treat anæmia by either laxatives or chalybeates he would use the former.

It is Sir Andrew Clark's theory that anæmia arises in a large number of cases from self-infection, or, in other words, a large number of anæmias are of fæcal origin. There is, no doubt, a good deal of truth in that statement. However, the most rigid and extraordinary antisepsis, which nowadays can be readily obtained by naphthaline, salicylate of bismuth, or beta-naphthol, does not meet with the success that we should expect, although quite recently Pick has professed to have obtained good results in chlorosis from this method. My experience thus far is that the method of treatment by laxatives and bloodletting will be satisfactory in a limited number of cases only. However, it is safe to say that neither in bloodletting nor in laxatives, nor yet in securing intestinal antisepsis, can we hope to obtain such brilliant results as by the administration of iron.

In giving iron we have up to this time been greatly hindered by certain apparently insurmountable difficulties.

Blaud's pills, so much lauded and popularized by Niemeyer, certainly fail in a considerable number of cases. Notwithstanding the large amount of iron which one can administer in them, in many instances improvement does not follow their prolonged and uninterrupted administration. I am inclined to think that the potash is partly responsible for this, since it is, as we all know, one of the agents that promote waste.

The tincture of the chloride of iron has easily held the first place in popularity and efficiency. Combined with phosphoric acid, when well borne by the stomach, its therapeusis is unassailable.

The formula of Dr. Flint has for many years been a favorite.

When we find a coated tongue, feeble digestion, and constipation, the tincture of iron is contraindicated. I should rather say that these conditions called for a previous purgation and corrected digestion preliminary to a course of ferruginous treatment.

Castellino has found in his experiments that hæmoglobin is absorbed rapidly, is always well borne, increases the number of red cells and the specific gravity of the blood, and improves the general condition. If the administration of the hæmoglobin, however, is stopped before the normal condition is reached its effect is only fugitive.

In secondary anæmia it has failed completely in that its effects are only transitory. The use of this preparation, however, is extremely limited.

Since I am of the opinion that iron is our sheet anchor in the treatment of anæmia, and since all the preparations hitherto used either have been inefficient or have presented certain disadvantages, I come now to a consideration of a preparation which I am convinced will revolutionize the treatment of anæmia. Inasmuch as there are objections to strong preparations, Dr. A. Gude, of Leipsic, Germany, realizing the great injury done to the teeth, also the constipating effect that the tincture of the chloride of iron has, set about obtaining a preparation which, while retaining all the therapeutic effects, should present none of the disadvantages.

His preparation is neutral in reaction, of an agreeable, non-astringent, mildly aromatic taste, being miscible with wine or milk.

It is a solution of manganese-iron-peptone; as an organic combination of peptonates, here we have the digested albuminous compounds of iron, added to which is manganese, altogether making a most excellent specific in anæmia and chlorosis.

This preparation immediately passes through the alimentary ducts and is at once taken up by the blood; it is not a burden to the stomach to disturb digestion. I have found after using this preparation for one week its restorative influence upon the digestion and circulation, its prompt action being due to the happy combination of manganese with iron, thus infusing oxygen, iron, and manganese into the blood, producing the red corpuscles.

I take much pleasure in presenting you the record of a few cases in which pepto-mangan (Gude's) was used:

Case I.—M. B., aged five years, had been treated for subacute malaria for two months past. She complained of headache, dizziness, and languor; appetite poor; coated tongue; palpitation of the heart; has chills at times; the bowels are constipated, pulse weak; the muscles are flabby; the condition of the skin is pale, the veins are poorly filled, the mucous membranes are very pale, the lips white, the eyes sunken; the expression of the face is careworn and haggard. I ordered pepto-mangan, one drachm, four times a day, seven weeks after which she made a complete recovery.

Case II.—Miss R., aged seventeen years, schoolgirl. For the past two or three months she has been running a downward course; the mucous membranes of the eyes and lips are pearl color; the cheeks are devoid of color, pale, and careworn; there is loss of appetite, constipation, feeble circulation; she has frontal headaches and dizziness, with slight cough; the suggestion of food makes her feel sick at the stomach; the menstruation is scant and very irregular, with considerable pain. At times her mother says she is very irritable, crying for almost nothing; she is very easily frightened; during the day she grows drowsy and will lie down and sleep for an hour or two; in the afternoon she comes home from school tired and irritable and suffering from headache.

In this case I ordered pepto-mangan combined with liquor potassii arsenitis, or Fowler's solution; of the former, two drachms, and the latter, one minim, four times daily. At the end of the first week there was slight improvement generally; at the end of the second week still improving, and at the end of the four weeks marked improvement. In nine weeks discharged with complete recovery.

Case III.—Miss V., a young lady, nineteen years of age, unmarried; the family history is excellent. She suffers with severe headaches, is sick at the stomach; loss of appetite, constipation; is extremely nervous; she faints easily; the menstruation is irregular and scanty; the circulation is poor, the extremities are cold; at times she has palpitation of the heart and is dizzy; the complexion is washed-out, pale, and careworn; the lips are almost colorless. This case is more interesting, inasmuch as she had been under the care of several doctors and there was quite a difference of opinion. The specialist corrected the vision with glasses in hopes that the headaches would diminish, but without avail; sulphate of quinine had been used unlimitedly, Warburg pills, and, in fact, the treatment for malarial disease was vigorously used and no improvement was observed. Under the conditions I resolved to use pepto-mangan in tablespoonful doses, four times a day, in milk. Improvement made its appearance in less than a week; at the end of two weeks a most decided improvement; at the end of four weeks the headaches had disappeared, the appetite was excellent, the bowels were regular, the face was filled with animation and color, the lips were red, the eyes bright, and in eight weeks' treatment she made a complete recovery.

Case IV.—E. D. P., aged twenty-two years; single; sick one year; menstruation at thirteen, always irregular, recurring every three to eight weeks, lasting five or six days, and profuse. For the last six months she has had her periods every fourteen days; profuse; slight leucorrhœa; headaches at times constant, worse in the morning; dizziness, palpitation of the heart, fainting, shortness of breath on ascending the stairs, pain in the region of the stomach; appetite very poor; pain under the right shoulder; food distresses her; the bowels are constipated; the pulse is 88, weak, irregular; the lips are pale, the tongue is coated. Pepto-mangan (Gude's) was used in two-drachm doses four times daily; improvement showed itself in about a week; in two weeks was still improving, and at the end of six weeks she made a complete recovery.

Case V.—H. S. B., a schoolboy, fifteen years of age; pale and sickly for the past three months; no appetite; tongue coated; eyes dull and heavy; facial expression haggard and careworn, cheeks pale, lips devoid of color; extremities are cold; the circulation poor; the pulse weak and irregular. He complains of headaches after school, is sick at the stomach, dizzy at times, and very nervous, also irritable; has no desire for food; he likes candy and cake better.

In this case pepto-mangan (Gude's) was ordered in one-drachm doses five times daily. In about ten days improvement presented itself; in three weeks was still improving, and at the end of the seventh week he was discharged as making a complete recovery.

Case VI.—Mrs. M. S. P., a married woman, twenty-seven years of age, the mother of three children, the youngest five months old; quite advanced in the secondary stage of anæmia; she is unable to attend to her household duties, owing to her weak and generally run-down condition, having headaches, neuralgic pains about the shoulders; tired, at times sleepy; constipated; tongue flabby and coated; the menstruation absent since the birth of the last baby five months ago; has palpitation of the heart; the appetite poor; cooking makes her sick at the stomach.

She is pale, the facial expression haggard, the eyes are dull and sunken, the lips without color, the circulation weak, pulse irregular, and extremities cold.

Pepto-mangan (Gude's) was ordered in tablespoonful doses four times daily in sherry wine, and in a week's time the improvement was very marked, and in about nine weeks she made a complete recovery.

Case VII.—Mrs. A., aged fifty-two years, married, has had six children, the youngest twelve years of age. For the past two years her health has been failing, she having lost about eighty pounds. Her family history is good. The appetite had been poor for the past year and a half, bowels constipated; she began to show signs of mental derangement about a year ago, when nothing seemed to suit her; at times she would be herself; at night she was unable to rest or sleep, getting up and walking up and down the room, moaning. At times she would cry and moan for two or three hours at a time; this was usually in the morning. This state of melancholia was growing gradually worse, her so-called well spells getting shorter in duration. Suddenly she would go off into a crying spell, then moaning and sighing.

The circulation was weak, the pulse 110; the skin was dry and flabby; the eyes were dull; the facial expression was careworn and haggard; the tongue was coated and flabby; the complexion was waxy; the lips were without color and thin.

The liver being rather sluggish in its function, I gave a powder made up of hydrarg. chlor. mit., gr. iv; pulv. ipecac., gr. ⅛; pulv. zingiberis, gr. ⅛; salol, gr. ij; and sodii bicarbonat., gr. ij. This was given at bedtime, the following afternoon commencing upon a mixture of sulphate of codeine, gr. ⅛, and pepto-mangan (Gude's), a tablespoonful, in a small wineglassful of sherry wine, four times a day.

During the first week the patient began to show slight signs of improvement, at the end of the second week still further improvement, and at the end of the first month her daughters were able to take her out for a carriage ride through the park, and this was the first time in thirteen months that she had been outside of the house. Her appetite is improving; the condition of the skin and complexion is much better, the eyes are brighter, the so-called bad spells are growing shorter, she rests and sleeps quietly through the night. Altogether the prognosis is most favorable to a complete recovery within the next two months.

Case VIII.—Miss R., aged nineteen years. She has been sick for the past three months; always well until this; complains of shortness of breath on exertion, palpitation of the heart, coldness of hands and feet; is tired most of the time; has fainting spells; she is regular in menstruation; has pain before the flow for three days; the flow is becoming more scanty and pale; appetite fair; bowels constipated; the skin and conjunctivæ pale; tongue coated, tremulous, and flabby; first sounds of the heart weak; tenderness over the liver, but no enlargement; pulse weak and irregular. Pepto-mangan (Gude's) in two-drachm doses five times a day was given, and in about nine weeks she made a complete recovery.

In concluding I might add that in the medical treatment of anæmia, also chlorosis, we find a specific in the combination of iron and manganese as prepared by Dr. A. Gude, and I congratulate him upon the excellence of the preparation, as it has proved a most efficient and valuable one.

The disadvantages in all other preparations of iron are obviated in pepto-mangan; in removing these disadvantages its therapeutic efficacy is not in any way impaired.

The Marion County, Fla., Medical Society will hold its annual dinner on Monday, December 9th, at the Montezuma Hotel, Ocala.

SOME OBSERVATIONS ON
THE DIMINUTION OF THE PERCENTAGE OF HÆMOGLOBIN DURING SLEEP.

By JOHN RUHRÄH, M. D.,
RESIDENT PHYSICIAN, BALTIMORE CITY HOSPITAL.

(Contribution from the Baltimore City Hospital.)

Some interesting observations have been made during the past few months at the City Hospital, under the direction of Dr. George J. Preston, professor of physiology in the College of Physicians and Surgeons, on the blood changes taking place during the unconsciousness of sleep and chloroform narcosis.

The observations on the subject of the diminution of hæmoglobin during the anæsthetic stage of ether narcosis, made by Dr. Da Costa, of New York, were confirmed, and the diminution found to be constant also in the anæsthetic stage of chloroform narcosis.

In regard to the unconsciousness during sleep it was found that the percentage of hæmoglobin is diminished just as it is during unconsciousness from the anæsthetics, chloroform and ether. The results were constant with one exception, and this was due to faulty technics.

The estimation was made by the use of von Fleischl's hæmometer, and the blood was taken from the ear in all cases. Observations were made at 4 p. m., 12.30 a. m., and usually a control observation made about 10 a. m. of the following morning.

The subjects were patients in the City Hospital, mostly convalescents. They were always asleep when the midnight observation was made and usually had been for several hours. Frequently the blood was taken without awakening the subject.

The numbers in the table are the readings on the scale of the hæmometer and have not been reduced to percentage.

Table I is sufficient to show the characteristic changes:

Table I.

No.	Age.	Race	Occupation.	Disease.	4 P. M.	12.30 A. M.	10 A. M.	Date of first record.
1	21	White.	Laborer.	Fissure of anus.	..	57	82	Mar. 7.
2	40	"	"	Sprain of ankle.	74	64	73	Mar. 7.
3	35	"	"	Fracture of leg.	72	60	..	Mar. 8.
4	44	"	Salesman.	Syphilis, tert'y.	90	70	..	Mar. 11.
5	35	"	Clerk.	Typhoid.	65	50	60	Mar. 12.
6	42	Black.	Laborer.	Fracture of leg.	50	47	..	Mar. 15.
7	30	"	"	Epididymitis.	85	65	82	Mar. 16.
8	35	"	"	Fracture of leg.	87	72	..	Mar. 19.
9	18	"	Office boy.	Ulcer of leg.	78	65	..	Mar. 20.
10	35	"	Laborer.	....	50	55	..	Mar. 29.
11	..	......	....	....	70	55	..	Mar. 31.
12	35	White.	Laborer.	Fracture of leg.	80	55	..	Mar. 30.
13	19	"	"	Grippe.	85	60	..	Apr. 1.
14	30	"	"	Cut head.	65	54	..	Apr. 2.
15	29	"	"	Grippe.	74	62	..	Apr. 3.
16	30	"	"	Cut head.	87	75	..	Apr. 5.

The Medical Department of Dartmouth College held its graduating exercises on Tuesday evening, November 26th. The graduating class numbered thirty-eight.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
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Edited by
Frank P. Foster, M. D.

NEW YORK, SATURDAY, DECEMBER 7, 1895.

MEDICAL PUBLICATIONS OF GOVERNMENTAL AND QUASI-GOVERNMENTAL SCOPE.

We have already announced briefly the fact that enough subscriptions have been obtained to warrant the editors and the publisher of the *Index Medicus* in resuming its issue. The year 1895, which witnessed the suspension of the *Index*, is drawing to a close. It has not, we take it, been a year of widespread prosperity with physicians in the United States; it is all the more to their credit, therefore, that they have accomplished by contributions of money what for some time it seemed hardly possible to do. With the April number of the *Index* came the suspension. Ample warning had been given that it was impending, but no earnest effort had been made to avert it. It came, and for some months it led to not much more than apathy or hopelessness in the profession. Then, in the summer, a time of year when great undertakings are not commonly entered upon confidently in this country, voices began to be heard from various quarters of the Union in favor of some definite plan of action for putting the *Index* on a firm and enduring basis. Perhaps the decisive stroke that gave the necessary confidence was Dr. Sajous's bold contribution of cash, coupled with his spirited appeal to other physicians to do likewise; but the honor should probably be divided between him and several other gentlemen who have urged on the good work to its completion.

Now that the profession has put its own shoulder to the wheel to such good purpose, it may with all the greater propriety call upon the national government to give it a new issue of the *Medical and Surgical History of the War of the Rebellion.* Our Indiana friends have started an agitation with this in view, as we mentioned last week, and we hope their effort will be helped along by every American physician. The work in question, like the *Index-Catalogue of the Library of the Surgeon-General's Office*, is of such a character as to require to be published by the government if it is to be published at all, and, as our Indiana colleagues say, it ought to be obtainable by every American practitioner—not, we should say, gratuitously, but at a price based on the cost of its production. The present session of Congress may not present a favorable situation for proposing the plan. That is not Congress's fault, but the fault of the times. Congress is sure to be confronted with serious problems in finance, and may consequently be more than usually averse to appropriating a large sum for the purpose in question. The gentlemen who have the project in charge will doubtless weigh seriously the question of whether or not it is better to wait. If they decide to bring it before Congress at this session, it will be only after they have duly considered the expediency of pressing it at the present time, and it will then be every American physician's duty to give the measure what support he can.

To recur to the *Index Medicus.* It will be seen by the letter from the editors, published in this issue of the *Journal*, that they have decided not to accept any further subscriptions. Some considerable time will have to elapse, we think, before a conclusion can be formed as to the wisdom of this restriction, for it is out of the question to know yet how it will strike some of the persons who are subscribers, as well as those who are not. At present the restriction seems to us of doubtful expediency.

MINOR PARAGRAPHS.

"KNOCK-OUT DROPS."

Occasionally a convivial individual finds himself—or is found by the police—suddenly overcome, is reduced to helplessness. This does not happen from potations indulged in at home, but always after taking a drink with a stranger, and the popular impression is that the drink is drugged, drugged to such potency that it seems to merit the name of "knock-out drops." Medical men in general are skeptical as to the feasibility of so drugging a sober man with anything that he will accept as liquor, and we think the general impression in the profession is that those who say they have been "knocked out" with drugged drink must have been drinking heavily beforehand. Nevertheless, there may be something for us to learn about "knock-out drops," and why may we not learn it? Every now and then a specimen of the alleged "drops" falls into the hands of the police, and we have heard the suggestion made that the police surgeons would not be exceeding their duty if they were to subject the stuff to investigation with a view to finding out what it is. The suggestion seems to us a good one.

ITEMS, ETC

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 3, 1895:

DISEASES.	Week ending Nov. 26		Week ending Dec. 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	23	3	28	1
Scarlet fever	72	1	52	2
Cerebro-spinal meningitis	1	1	2	2
Measles	186	11	186	14
Diphtheria	182	25	229	27
Small-pox	0	0	1	0
Tuberculosis	115	106	72	118
Leprosy	1	0	0	0

The Congress of American Physicians and Surgeons.—At a meeting of the executive committee of the Congress of American Physicians and Surgeons, held in New York on November 23d, the following officers were elected: President of the congress, Dr. William H. Welch, of Baltimore; secretary of the congress, Dr. William H. Carmalt, of New Haven; treasurer of the congress, Dr. Newton M. Shaffer, of New York; chairman of the executive committee, Dr. Landon Carter Gray, of New York; secretary of the executive committee, Dr. William K. Simpson, of New York. The next meeting of the congress will be held in Washington in May, 1897.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 24 to November 30, 1895:*

Adair, George W., Major and Surgeon, is granted leave of absence for one month, to take effect about December 4, 1895.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending November 30, 1895:*

Crandall, R. P., Passed Assistant Surgeon. Detached from the Naval Laboratory and ordered to the Naval Hospital, New York.

Leach, Philip, Passed Assistant Surgeon. Detached from the Naval Hospital and ordered to the Naval Laboratory, New York.

Wales, P. S., Medical Director. Ordered to duty as a member of Retiring Board, Washington, November 25, 1895, in addition to his present duties.

Anderson, F., Surgeon. Detached from the U. S. Steamer Amphitrite and ordered to the U. S. Steamer Dolphin.

Berryhill, T. A., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to the Port Royal Naval Station.

Gardner, J. E., Surgeon. Detached from the Port Royal Naval Station and ordered to the U. S. Steamer Amphitrite.

Kite, I. W., Passed Assistant Surgeon. Detached from the U. S. Steamer Franklin and ordered to the Naval Hospital, New York.

Rixey, P. M., Surgeon. Detached from the U. S. Steamer Dolphin and placed on waiting orders.

Society Meetings for the Coming Week:

Monday, *December 9th:* New York Academy of Medicine (Section in General Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Lenox Medical and Surgical Society, New York (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Maine Academy of Medicine (annual—Portland); Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Marion County, Fla., Medical Society (Ocala).

Tuesday, *December 10th:* New York Academy of Medicine (Section in Genito-urinary Surgery); New York Medical Union (private); Kings County, N. Y., Medical Association; Medical Societies of the Counties of Oswego (semi-annual—Oswego), Rensselaer, and Ulster (quarterly), N. Y.; Newark (private) and Trenton, N. J., Medical Associations; Morris, N. J., Connty Medical Society (semi-annual); Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Ky.

Wednesday, *December 11th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Metropolitan Medical Society, New York (private); Medical Societies of the Counties of Albany and Montgomery (annual), N. Y.; Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society.

Thursday, *December 12th:* Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; New York Laryngological Society (annual); Medical Society of the County of Cayuga (semi-annual), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *December 13th:* Yorkville Medical Association, New York (private); Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Cleveland Medical Society; Medical Society of the Town of Saugerties, N. Y.

Saturday, *December 14th:* Obstetrical Society of Boston (private).

Births, Marriages, and Deaths

Married.

Brown—Gray.—In Holly Springs, Miss., on Saturday, November 30th, Mr. Bernard Brown, of Memphis, and Miss Rivers Gray, daughter of Dr. J. W. Gray.

Harper—Frantz.—In New Orleans, on Wednesday, November 20th, Dr. W. W. Harper, of Selma, Ala., and Miss Rosa Frantz.

Rogers—Merington.—In New York, on Saturday, November 30th, Dr. George A. Rogers and Miss Ethel Merington.

Rutherford—Gardiner.—In Batavia, N. Y., on Thursday, November 28th, Dr. M. C. Rutherford, of Rochester, and Mrs. Ida M. Gardiner.

Died.

Gerlach.—In San Francisco, on Monday, December 2d, Dr. George Gerlach.

Kimball.—In Michigan, on Thursday, November 28th, Dr. Clarence E. Kimball, of Mount Vernon, N. Y., aged thirty-two years.

Miller.—In Elizabeth, N. J., on Tuesday, December 3d, Dr. David M. Miller.

Sutton.—In Dallas, Texas, on Saturday, November 23d, Dr. William H. Sutton.

Schmittle.—In New Orleans, on Sunday, November 24th, Franciska, wife of Dr. Joseph Schmittle.

Letters to the Editor.

THE ILLINOIS STATE BOARD OF HEALTH VS. THE NORTHWESTERN UNIVERSITY WOMAN'S MEDICAL SCHOOL.

Chicago, *November 26, 1895.*

To the Editor of the New York Medical Journal:

Sir: In the July issue of various prominent medical journals appeared a letter from the Illinois State Board of Health accompanied by a set of resolutions adopted by said board. The undersigned, the executive committee of the faculty of the Northwestern University Woman's Medical School, having carefully investigated this matter, desire to make the following report, in order that no injustice may be done to the State board.

The resolutions adopted by the State board are as follows:

Whereas, The faculty of the Northwestern University Woman's Medical School adopted a set of resolutions criticising the Illinois State Board of Health for having issued to three non-graduate students of said college the State certificate entitling them to practise medicine, who they claim were not entitled to receive them, and charging the board with having adopted a lax policy in numerous other instances, thereby seriously detracting from the usefulness of the board; and

Whereas, Although the resolutions were "ordered to be placed before the Illinois State Board of Health," they were furnished to the various medical publications of the country simultaneously with their presentation to the board, and before the board had an opportunity to make any defense; and

Whereas, The said college had not made any investigation of the methods or policy of the board, and could not be in possession of information upon which to found such serious charges; and

Whereas, The secretary of the faculty admitted to the secretary of the board that the resolutions were adopted without due consideration and were not so applicable to the present board; and

Whereas, In the past two years no certificate has been granted to any applicant upon an average rating less than eighty per cent. on all branches, and the questions and examination papers and a tabulated record of all examinations are preserved and are matters of record in the office; and

Whereas, It is not in the province of the board to adopt any policy regarding the admission to its examinations of non-graduates, the law prescribing that "non-graduates shall submit themselves for examinations" and further prescribing that "the examinations shall be of an elementary and practical character"; therefore, be it

Resolved, That justice demands that the faculty of the Northwestern University Woman's Medical School, and all others interested, inform themselves as to the methods and policy of the Illinois State Board of Health in conducting its examinations, with a view to the establishment of the charges made or of making such withdrawal, alteration, or explanation of the charges as the facts may warrant; and further, that the faculty inquire as to whether any individual interest or personal animosity prompted the drafting and circulating of the resolutions.

[Signed.] B. M. Griffith, M. D.,
Sarah Hacket Stevenson, M. D.

The original resolution of the faculty of the Northwestern University Woman's Medical School, to which the foregoing refers, is as follows:

Whereas, On three occasions within the past three years the Illinois State Board of Health has licensed to practise medicine in this State students who have not properly qualified themselves for such duties and whose incompetence has compelled us to withhold the degree of Doctor of Medicine; and

Whereas, By common report we are informed that the State board has adopted a similar policy with reference to numerous other persons; therefore

Resolved, By the faculty of the Northwestern University Woman's Medical School that the State board of health be requested hereafter to make its examinations so rigid that persons incompetent to obtain the degree of Doctor of Medicine from first-class medical colleges can not obtain license to practise from the Illinois State Board of Health.

Resolved, That the State board of health be urged to do all in its power to secure a modification of the State law, so that the privilege of examination for license to practise in this State can only be obtained by graduates of recognized medical schools in good standing.

Resolved, That for the protection of the lives and health of our people, we believe it is the duty of the State board of health to do all in its power to prevent the entrance into the medical profession in this State of any persons not properly qualified; and further

Resolved, That, in the interests of humanity and medical science, we believe the State board should make its standard of qualifications as high as that of the best medical colleges in this country, and that it should do all in its power to aid and encourage the efforts of the profession and the people for thorough medical education and higher requirements of licentiates and for the degree of Doctor of Medicine.

[Signed.] Marie J. Mergler,
Secretary.

Replying to the State board of health, we beg to state that after thorough investigation we find that not only the three incompetent undergraduates referred to in our resolutions, but others similarly conditioned from our school, have been granted license to practise medicine, and we find further that it is believed by medical teachers and other members of the profession that the State board of health has frequently conferred the license to practise in the State of Illinois on undergraduates whose requirements were not sufficient to enable them to obtain the degree of Doctor of Medicine from the medical schools of the State that are recognized as in good standing by the board of health.

This policy is not calculated to advance the standing and active usefulness of the medical profession, or to protect the public from incompetent practitioners. The board of health and its individual members have been *repeatedly* urged to discontinue this practice, but, as these remonstrances have heretofore proved unavailing, the faculty of the Northwestern University Woman's Medical School determined by public action to bring the matter to the notice of the profession, hoping thereby to obtain their aid in securing a better policy by the State board.

The board is in error in thinking that the faculty acted hastily or without investigation, for it was familiar with the fact of the licensing of incompetent persons, not only from among *its* students, but among students of other schools. This practice has been in vogue since the first organization of the board, but the last cases were, if possible, more flagrant and inexcusable than those which preceded them.

The secretary of the State board of health is mistaken in stating that the secretary of the faculty of the Woman's Medical School said that the resolutions were adopted without due consideration, though another member of the faculty did admit to him that if his statements were correct, the criticisms were not so applicable to the present board as to former boards; however, the secretary is not aware that the practices of the present board differ materially from those followed by earlier ones composed of a different membership.

Shortly after the original resolution was passed, the secretary of the State board of health interviewed several members of the faculty, and on one of these occasions stated, in extenuation, that the particular individuals now in the State board of health constituted an entirely different board from that of former years. We are aware that the State board of health changes more or less from time to time in its *personnel*, but one of the signers of the series of resolutions under consideration has been a valued member of the State board for many years, and we can not understand why he should have allowed such a practice as granting licenses to incompetent persons at any time without a vigorous protest.

If the policy of the board as now constituted is better than that of former years in this respect, it appears to be only a degree, for the same official, in one of these interviews, stated that no applicants for license were now passed on an average of less than eighty-five per cent. on all branches, whereas the resolutions printed above place it at eighty per cent.; but he also admitted that formerly applicants were passed on a grade of fifty per cent. It must be borne in mind that the grade obtained on an examination depends upon the nature of the questions, the fairness with which they have been given out, the honesty with which they have been answered, the care taken to prevent cheating, the fairness with which they have been marked, and the qualifications of the examiner. Questions may be peculiarly easy; proper care may not have been exercised to prevent them from falling into the hands of the applicant beforehand or to prevent communication by the interpreters or others at the time of the examination, or the examiner himself may have marked too high. For example, an examiner who knew very little of anatomy might consider a very poor paper on that subject of exceptional excellence.

The secretary of the State board explained to us his efforts to prevent cheating among applicants for midwives' licenses and he led us to infer that similar precautions were taken for those taking the medical examinations. He asked if we questioned the honesty or ability of certain members of the board of health, but, as we stated to the secretary thereof, we can not understand how an ignorant person, unable to obtain a grade of more than thirty-five or forty per cent. on an ordinary examination for the degree of Doctor of Medicine, can come before the State board within three, six, nine, or even twelve months afterward, and pass an excellent examination. Teachers know that it is impossible to acquire a knowledge of medicine with this rapidity. Therefore, the inference would be that eighty or eighty-five per cent. by the State board of health is equivalent to little more than thirty-five or forty per cent. by the colleges. If this is so, the State board should raise its grade still higher or mark more carefully.

It was also admitted in one of these interviews that one of the persons referred to was in no way fitted to practise medicine, but it was maintained that the answers obtained from her in examination were excellent, and that the board had no option in the matter. As a possible explanation of the excellence of the papers handed in by ignorant applicants, it was suggested that any one could "cram" and pass a good examination on two or three subjects; and it was explained that it was the custom of the board of health to give those taking their examinations full credit for each and every branch in which they succeed in obtaining a passing mark, though they might utterly fail in all others. It will be readily seen that in an extreme case this policy would allow an applicant to pass one branch at a time every three months (we believe the examinations are quarterly) until the whole had been gone through with, while at the time the license was granted the person might not be able to obtain a general average of over twenty-five per cent. We are not informed, officially or otherwise, that the board has even yet taken any step to correct this bad practice.

It is stated in these resolutions that the Illinois State Board of Health is not at liberty to adopt any policy regarding the admission of non-graduates to examination—that is, persons mentally or morally unfit to practise medicine must be admitted to the examination if they apply; but certainly the law can not require the board to issue licenses to such persons. In our resolution we called upon the board, if there were defects in the law, to make all proper efforts to have them remedied. We have not been informed, either publicly or privately, that it has made any effort in that direction.

In the resolutions by the State board of health we are told that the law demands that the examination shall be "elementary and practical." Though the law under which the board of health acts prescribes that examinations shall be of an elementary and practical character, it does not prescribe that the board of health shall confer on incompetent persons the privilege of practising medicine in Illinois, and the Legislature surely could have no such purpose in view when it enacted the law. If an applicant can pass a thorough examination in the elementary subjects of anatomy, chemistry, physiology, and materia medica and a practical examination in pathology, obstetrics, practice of medicine, and surgery, he would be able to pass the examination for the degree of Doctor of Medicine in almost any of the recognized colleges throughout the United States.

We deeply regret that the resolutions of the State board of health failed to remove the belief that their methods are faulty, and we personally know another student who obtained license to practise during the past year who was unable to pass the examination for the degree of Doctor of Medicine this last spring. We have informed ourselves so far as possible of the methods and policy of the board of health, and we gladly embrace this opportunity to do it exact justice. The faculty of the Northwestern University Woman's Medical School does not need to disclaim the suggestion that any individual interest or personal animosity prompted the drafting and circulating of the resolutions. This faculty, individually and collectively, is friendly to the Illinois State Board of Health, but in the matter under consideration it has been constrained as a matter of public duty to question the wisdom and propriety of some of its acts. We will gladly be the first to give it credit when it corrects its faulty practice, and we will gladly aid it in securing any necessary legislation for elevating the profession and for the benefit of the people.

I. N. DANFORTH,
E. FLETCHER INGALS, } *Executive Committee.*
MARIE J. MERGLER,

PAQUIN'S ANTITUBERCLE SERUM: REMARKS ON DR. HEWETSON'S EXPERIMENTAL TESTS.

ST. LOUIS, *November 30, 1895.*

To the Editor of the New York Medical Journal:

SIR: In the issue of November 9th of the *New York Medical Journal* Dr. Hewetson gives his experiments with antitubercle serum in two guinea-pigs, from which he concludes that this product does not influence the tubercle process in this animal, and gives the impression that, consequently, it can scarcely be effective in the treatment of human tuberculosis. I trust I may be allowed a word in answer to this criticism, founded on such slight testimony, so far at least as the quantity is concerned.

In the first place, I beg to say that experimental tuberculosis has been arrested in animals during my own experiments, but owing to the impossibility of procuring guinea-pigs, they being so scarce, the series of tests was interrupted early, too early to allow of their publication in a satisfactory manner, although they left no doubt in my mind that tuberculous animals might be benefited by the injections of serum. On the other hand, the funds at my command being wholly dependent on the meagre revenue from medical practice, I was as a matter of necessity unfortunate enough to be forced to commercialism in order to continue my work. Therefore I had to supply serum to the profession at an earlier date than I would otherwise have done, a fact which brought upon my head many unjust criticisms. However, I offer no apology for this course, as no literature of mine was ever issued that did not present actual facts, and no one could be deceived on any representation I had made.

Experimental cases of tuberculosis will be presented to the medical profession within a few months, completing work previously begun. The series will be large enough, I hope, and the results such as will satisfy any one that tuberculosis may be arrested experimentally in animals with antitubercle serum.

Besides, when our results with patients in the City Hospital of St. Louis were published we had not, and have not to this day, established satisfactorily an absolute standard of strength; the serum varies with the horse used in its production, with reference to the virulence of the cultures used in infecting small animals, and with the nature of the disease in different kinds of tuberculous processes as we find in different individuals.

It is a mathematical fact that an antitoxine can neutralize only a *certain quantity* of toxines. It is established also that the *quality* of the poisonous properties varies greatly, whether produced in tubes or in the body of an animal. Hence, one will utterly fail to arrest the progress of tuberculosis or diphtheria if an insufficient amount of antitoxine is injected or if it is comparatively weak in its neutralization powers. Dr. Hewetson, in my judgment, had serum deficient in one or both ways. Being forced early to supply demands for experiments, I guaranteed no standard strength. It is extremely difficult to produce strong tubercle antitoxine or antituberculin, but I have produced a regular output for some months powerful enough to cause recovery from acute and chronic pulmonary tuberculosis and from surgical tuberculosis in man, and the failure to arrest this disease in two guinea-pigs can not break the force of these facts, which I am ready to substantiate.

We are working diligently to increase the antitoxic power of the serum produced under my direction, and within a few months we shall be able to present a universally satisfactory article with a standard strength. I am in a position to prove that all of that which we have allowed the profession to use has produced good results and most of it has recoveries to its credit, but we are progressing slowly but surely and improving the therapeutic value of the new agent.

Paul Paquin, M. D.

THE *INDEX MEDICUS.*

Washington, D. C., *November 27, 1895.*

To the Editor of the New York Medical Journal:

Sir: We ask permission to state that, the plan proposed for continuing the publication of the *Index Medicus* having been successful, no more subscriptions can be received.

John S. Billings, M. D., } *Editors.*
Robert Fletcher, M. D., }

Proceedings of Societies.

SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION.

Eighth Annual Meeting, held in Washington, D. C.

The President, Dr. Louis McLane Tiffany, of Baltimore, in the Chair.

Personal Experience in the Treatment of Stab Wounds of the Intestines and Peritonæum.—Dr. Bedford Brown, of Alexandria, Va., in a paper thus entitled, stated that about one hundred and thirty cases of stab wounds of the peritonæum and intestines had come under his care during his entire professional experience in both private and military practice. In less than one third of the cases the intestines had been wounded. It was a little remarkable, said the author, that there should be such a disproportion in the number of intestinal wounds in these cases; in other words, it was a singular fact that in a large majority of abdominal wounds the intestines escaped injury even when such wounds were extensive. Transverse and longitudinal stab wounds of the intestines were then considered at length. Dr. Brown regarded the sabre wound as one of the most dangerous in its immediate and remote results. If the edge and point of the sabre were sharp the wound inflicted was large and deep. The weapon cutting through the intestines and mesentery, usually passing through the abdomen, severed large blood-vessels and caused frightful hæmorrhage, which was speedily fatal. He had seen only three sabre wounds of the abdomen, and they had ended fatally in a brief time. The stiletto was a dangerous instrument, as it almost invariably pierced an intestine or other organ. It did not kill by hæmorrhage usually, but made an opening in the intestine sufficiently large to permit of the escape of a small quantity of fæcal matter, causing septic inflammation. A stiletto wound was one of the most difficult of all intestinal wounds to detect.

The diagnosis of intestinal wounds was then dwelt upon, reference being made to Senn's hydrogen-gas test to detect wounds of the intestine. While the author considered it a useful test, in remote sections of the country, far from large cities and town, it was not practicable, because of the impossibility of procuring the apparatus and generating the gas. In all abdominal stab wounds the author's rule had been, after cleansing the hands and thoroughly disinfecting them, to insert the index finger and explore the intestine to ascertain if there was an opening. In certain cases a wound might exist in the intestine, but it might be so small as to escape detection. But if the intestine was wounded, whether we could insert the finger or not, there was always more or less extravasation of fæcal matter and gases, and if the finger came in contact with this matter it was certain to retain for a length of time the peculiar odor of human fæces. This would always afford positive evidence of an intestinal wound.

In treating simple wounds of the peritonæum, the author's rule had been to close them with silver-wire sutures after thorough disinfection. Formerly he had closed these wounds without regard to antiseptic measures, except that the wound was washed with hot water and soap. On the battlefield and in field hospitals wounds were washed with any water that was convenient, and were not washed at all when water could not be obtained. Previous to the introduction of antiseptic treatment in dressing wounds but little attention had been paid to the condition of instruments, sutures, sponges, or dressings except in the practice of ordinary cleanliness, and the percentage of cases of healing by first intention of simple wounds of the peritonæum had been large. In dressing simple wounds of the peritonæum scrupulous attention should be paid to the laws of cleanliness. In treating wounds of the intestines two procedures were necessary. One was a complete and thorough closure of the intestinal wound; the other was to cleanse the peritoneal cavity of all fæcal matter, blood, and gases from the intestine.

Dr. Brown then described a simple method of reducing a protruded intestine in stab wounds. He took two long, slender curved needles, threaded each with a silken cord ten or twelve inches long. One of these needles was passed midway through the margin of the wound, the other needle was passed through the opposite margin, and then each cord was tied in a separate loop. These cords were drawn in opposite directions by two assistants, upward and outward, firmly and tightly. By this means the wound was made to expand or gape widely, and at the same time the walls of the abdomen for a large area around the wound were very considerably elevated above the intestines, while the patient reclined in the dorsal posture; a considerable vacuum was in this way created, and the intestines would glide back without force or manipulation to fill this newly created vacuum.

Dr. RICHARD DOUGLAS, of Nashville, said that in peritoneal wounds there was always a mixed infection, which was more serious than an infection from the colon bacillus. Peritonitis, whether local (adhesive) or general (septic), should be considered of germicidal origin. In closing the abdominal wound it was proper to always approximate the peritonæum, as by so doing we lessened the danger of hernia.

Dr. C. A. L. REED, of Cincinnati, expressed himself as being apprehensive about mere exploration with the finger to detect stab wounds of the intestines. However erudite the tactile sense of the surgeon might be, at times it would prove misleading, and therefore in certain cases it was exceedingly important to enlarge the original incision or wound, and the viscera lying immediately beneath it should be brought out and carefully inspected. He believed with Dr. Douglas that the peritoneal margins should be carefully approximated.

Dr. JAMES EVANS, of Florence, S. C., related an instance in which nine men had received chest wounds by the bayonet during the war, the bayonets having been previously stuck into the ground, and yet all of the men had recovered. He attributed their recovery to the form of wound made by the bayonet. In another case a man had been shot within half an inch of the navel. He had no rise of temperature, yet when the speaker saw him the omentum had been extruded to the size of both his hands. He applied a double ligature, then put a piece of adhesive plaster over the surface, and the man recovered. He had frequently seen gunshot wounds of the abdomen during the war in which there was extravasation of fæcal matter through the wound, but unaccompanied by shock.

Dr. A. VANDER VEER, of Albany, had always made it a practice to first inquire carefully as to the kind of weapon with which the wound had been inflicted. He had seen several of the wounds inflicted by bayonets during the war, but did not remember having seen the intestines or stomach penetrated by them. There should be no delay in treating stab wounds. The surgeon should act promptly and not wait for symptoms to present themselves. Just as a case of perforative appendicitis would terminate fatally in a short time, so would stab wounds of the intestinal tract, unless timely interference was resorted to.

Dr. HUGH T. NELSON, of Charlottesville, Va., said the necessity of enlarging the abdominal wound, under all circumstances, was an imperative one. Four years ago he had seen a case in which the small bowel was wounded by a knife and the patient refused operation for twenty-four hours, believing that this viscus was not cut. The symptoms became alarming and the patient finally consented to have an operation performed. Dr. Nelson opened the abdomen by a long incision, but found it impossible to remove from the peritoneal cavity the extruded contents of the bowel, owing to the fact that an adhesive inflammation had taken place and had agglutinated them to the bowel so firmly that he could not wash them away. He attempted to resect the peritonæum of the pelvic cavity, where the fæcal matter had burrowed, but could not do so. Peritonitis became general and the patient died. The sooner the abdominal wound was enlarged in stab wounds the better.

Dr. GEORGE ROSS, of Richmond, asked whether there was any way of distinguishing between the symptoms of nervous shock and those of shock due to hæmorrhage.

Dr. BROWN replied that one of the most unerring symptoms was rapid reduction of temperature, but there was no symptom that would enable the practitioner to distinguish accurately between the different forms of shock, except the gravity of the condition.

Dr. W. E. B. DAVIS, of Birmingham, Ala., spoke of injuries of the gall bladder. The author had referred to the fact that injury to this viscus would produce a septic peritonitis. An injury that would produce peritonitis would result in death very soon if there was a large escape of bile into the peritoneal cavity, but Dr. Davis did not believe it was a septic peritonitis. He believed that in the majority of cases the shock following abdominal injuries was due to hæmorrhage, and the hæmorrhage played an important rôle in the production of symptoms in these injuries. It was the hæmorrhage from these wounds that frequently caused death.

Dr. JOHN D. S. DAVIS, of Birmingham, Ala., expressed himself, in regard to the diagnosis of intestinal wounds, as having very little confidence either in Senn's hydrogen test or the flushing method spoken of by the author. He had seen perforative wounds of the abdominal viscera where it was impossible, from their character and situation, to flush the abdominal cavity through the opening sufficiently to clean it thoroughly. In addition to the three forms of shock mentioned by the author, there should be added the shock of sepsis.

Dr. BROWN agreed with Dr. W. E. B. Davis that all cases of violent or dangerous shock were due to hæmorrhage. In regard to approximating the peritonæum, he had always left it untouched in closing simple wounds in the abdominal wall, and had found it good practice.

Report of Seven Cases of Abdominal Surgery in which the Murphy Button was Applied.—This paper was read by Dr. A. VANDER VEER, of Albany, N. Y. The author stated that the seven cases he desired to present had a bearing upon the use of the Murphy button, which was now receiving attention both in this country and abroad. It was difficult to understand some of the unfavorable reports made by English and German surgeons, when we contrasted them with the very successful results indicated by so many of our American operators in the practical application of this mechanical device. Perhaps there was no part of surgery that within the past quarter of a century had presented so much in theory and in which there had been so much disappointment as the field of abdominal work, with all its complications. In other words, how much we had changed from time to time our methods of treatment of many complications, and yet there had come certain reliable advances that had met all requirements for which they were indicated, leaving permanently in our possession the comforting thought that a grand progress in the sum total had been made; that we could treat all manner of pathological conditions, traumatisms, malformations, etc., of the intestinal tract and abdominal cavity with less embarrassment than perhaps those of any other part of the body, and yet there were very few portions of the human system upon which we operated where more rapid thought and better judgment were to be employed than the abdomen.

The first case was one in which gastro-intestinal anastomosis had been done for carcinoma of the pyloric end of the stomach by means of the medium-sized Murphy button, between the upper end of the jejunum and the greater curvature of the stomach. The patient had been comfortable after the operation, but had died from exhaustion on the third day.

The second case was one of carcinoma of the sigmoid flexure, removal, and end-to-end anastomosis. The operation had consisted in removing a mass in connection with the sigmoid flexure, three inches in length, and an anastomosis of the large intestine by means of the button. The patient had died from exhaustion on the eleventh day; he had been much exhausted and emaciated previous to the operation.

The third case was one of removal of gallstones from the gall bladder, in which the long drainage-tube button had been used. Recovery had taken place.

The fourth case was one of removal of eight inches of the small intestine with a papillomatous ovarian cyst. End-to-end anastomosis by the button had been done, and perfect recovery had followed.

The fifth case was one of anastomosis of the gall bladder with the small intestine. Recovery had followed.

The sixth case was one in which the operation had revealed a tumor of the size of a cocoanut in the immediate vicinity of the umbilicus, a portion of the size of a silver dollar implicating the umbilicus and in a gangrenous condition. On making an incision there had been found a strangulated hernia and many old and firm adhesions. The peritonæum was intensely congested and very dark in color. A loop of small intestine was included in the tumor and was gangrenous for the space of ten inches. Vessels in the mesentery were secured, and this portion of the intestine was excised. The Murphy button was used for end-to-end anastomosis. The button was passed thirteen days after the operation, and its passage was followed by a large movement of the bowels. Uninterrupted recovery ensued.

The seventh case was one in which a diagnosis of biliary calculi had been made. The author had made the usual incision for exploration of the gall bladder, and found it containing about two ounces of bile. Through the walls and down into the cystic duct could be felt a number of small calculi. There were some adhesions. He had made use of the long drainage-tube button to the fundus of the bladder, and closed the wound, after a careful examination for any possible cancerous mass, which had not been found, and then placed the patient in bed. He regarded the use of the button in this instance as a saving of time, leaving the patient in good condition for removal of the gallstones later. Several days after he had made the exploratory incision the attending physician had removed five irregularly shaped calculi, which Dr. Vander Veer exhibited. At this time the patient had begun to show marked symptoms of cerebral anæmia, with delirium, which had continued, and the patient had finally passed into a comatose state and died.

Dr. Vander Veer said that, although the cases he had reported were not many, yet they covered a field in which the Murphy button might be made use of so readily and easily, and the result was so satisfactory, that he had considered them worthy of attention as having a bearing upon statistics. He believed he had given a just criticism of the accumulation of facts, so that we could determine definitely as to the value and usefulness of this contrivance. The Murphy button would not answer for every lesion about the intestinal tract, but surely had its sphere of usefulness; it was clean and easily handled and saved the patient from a much longer operation, when time alone was the great desideratum.

(*To be continued.*)

Book Notices.

A German-English Medical Thesaurus, or Treasure of Single and Compound Medical Words and Terms, with Dialogues, Idiomatic Phrases and Proverbs, etc., and German and English Indexes. For Physicians and Medical Students. By the Rev. Henry Losch, M. D., author of *Improved Method and Complete Manual for the Systematic and Practical Study of the German Language*, etc. Philadelphia: Published by the Author. Pp. 323. [Price, $2.50.]

This work consists largely of German-English and English-German vocabularies, not only of mere words and their compounds, but of phrases. These vocabularies are quite comprehensive, and so far as we have been able to examine them they are accurate. They can not fail to be exceedingly helpful to young medical men who, having English for their mother tongue, wish to learn colloquial medical German or, having been reared in a German atmosphere, are desirous of acquiring correct methods of expressing themselves in English.

BOOKS, ETC., RECEIVED.

An Elementary Course in Experimental and Analytical Chemistry. By John H. Long, M. S., Sc. D., Professor of Chemistry and Director of the Chemical Laboratories in the Schools of Medicine and Pharmacy of Northwestern University. Illustrated. Chicago: E. H. Colegrove & Co., 1895. Pp. 507. [Price, $3.]

Pregnancy, Labor, and the Puerperal State. By Egbert H. Grandin, M. D., Consulting Obstetric Surgeon to the New York Maternity Hospital, etc., and George W. Jarman, M. D., Gynæcologist to the Cancer Hospital, etc. Illustrated with Forty-one Photographic Plates. Philadelphia: The F. A. Davis Company, 1895. Pp. 261. [Price, $2.50.]

Elementary Technique in Histology and Bacteriology. By Ernest B. Hoag, A. B., B. S., Instructor in Zoology and Physiology, Throop Polytechnic Institute, Pasadena, Cal., and H. Kahn, Phar. M. Mich., Assistant Demonstrator in Bacteriology, Northwestern University School, Chicago. Chicago: E. H. Colegrove & Co., 1895. Pp. 130. [Price, $1.]

Electro-therapeutical Practice. A Ready Reference Guide for Physicians in the Use of Electricity. By Charles S. Neiswanger, Ph. G., Professor of Electro-physics, Post-graduate School of Chicago. Chicago: E. H. Colegrove & Co., 1895. Pp. 5 to 80. [Price, $2.]

Notes on Surgery for Nurses. By Joseph Bell, M. D., F. R. C. S. Edin., Consulting Surgeon to the Royal Infirmary, etc. Fourth Edition, thoroughly revised. With an Additional Chapter of Advice to Nurses. Edinburgh: Oliver & Boyd. London: Simpkin, Marshall, Hamilton, Kent, & Co., Limited, 1895. Pp. 9 to 180. [Price, 2*s*. 6*d*.]

An Essay on Malaria and its Consequences. By Robert Lindsay, A. M., M. B., F. R. C. S. E., Retired Surgeon, Army Medical Department. London: H. K. Lewis, 1895. Pp. 116. [Price, 4*s*.]

The Medical Record Visiting List, or Physicians' Diary for 1896. New Revised Edition. New York: William Wood & Co., 1895.

On Some Points in Regard to Sterilization in Private Dwellings. By Carl Beck, M. D. [Reprinted from the *Journal of the American Medical Association.*]

A Case of Anthrax Septicæmia in a Human Being, associated with Acute Endocarditis and Peritonitis. By George Blumer,

M. D., and Hugh H. Young, M. D., Baltimore. [Reprinted from the *Johns Hopkins Hospital Bulletin.*]

The Treatment of Diphtheria with Diphtheria Antitoxine. By Edwin Rosenthal, M. D., Philadelphia. (Read before the Philadelphia County Medical Society, September 11, 1895.)

The Advantages presented by London to the American Medical Student. By A. O. J. Kelly, M. D., of Philadelphia. [Reprinted from the *International Medical Magazine.*]

The Opportunities offered by Prague, Heidelberg, and Dublin to the American Medical Student. By A. O. J. Kelly, M. D. [Reprinted from the *International Medical Magazine.*]

Two Cases of Carcinoma of the Pancreas. By A. O. J. Kelly, M. D. [Reprinted from the *University Medical Magazine.*]

Carcinoma of the Liver, with Cirrhosis. By A. O. J. Kelly, M. D. [Reprinted from the *University Medical Magazine.*]

Athetosis. By A. O. J. Kelly, M. D. [Reprinted from the *Philadelphia Polyclinic.*]

A Practical Treatise on Materia Medica and Therapeutics. With Especial Reference to the Clinical Application of Drugs. By John V. Shoemaker, M. D., LL. D., Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Medicine in the Medico-chirurgical College of Philadelphia, etc. Third Edition. Thoroughly revised. Philadelphia: The F. A. Davis Company. London: The F. J. Rebman Company, Limited, 1895. Pp. ix-1108. [Price, $5.]

Outlines of Materia Medica and Pharmacology. A Textbook for Students. By H. M. Bracken, M. D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the University of Minnesota. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. 9 to 383. [Price, $2.75.]

Practical Uranalysis and Urinary Diagnosis. A Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, Fellow of the Royal College of Physicians and Surgeons, Kingston, etc. Second Edition. With Numerous Illustrations, including Photo-engravings and Colored Plates. Philadelphia: The F. A. Davis Company. London: F. J. Rebman, 1895. Pp. xviii–357. [Price, $2.50.]

Medical and Surgical Report of the Children's Hospital, Boston. 1869–1894. Edited by T. M. Rotch, M. D., and Herbert L. Burrell, M. D.

Transactions of the Texas State Medical Association. Twenty-seventh Annual Session, held in Dallas, Texas, April 23, 24, 25, and 26, 1895.

The Anatomy of the Large American Fluke (Fasciola magna) and a Comparison with other Species of the Genus Fasciola, S. St. By Charles Wardell Stiles, Ph. D. Containing also a List of the Chief Epizoötics of Fascioliasis (Distomatosis) and a Bibliography of Fasciola Hepatica. By Albert Hassall, M. R. C. V. S. [Reprinted from the *Journal of Comparative Medicine and Veterinary Archives.*]

Retro-displacements of the Uterus. Their Treatment by a New Method. By Ernest F. Tucker, M. D. [Reprinted from the *Medical Sentinel.*]

The Treatment of Symptomatic Anæmia. By W. Blair Stewart, M. D., Atlantic City. [Reprinted from the *Medical Bulletin.*]

Notes on Parasites. By Charles Wardell Stiles, Ph. D. [Reprinted from the *Veterinary Magazine.*]

The Treatment of Chronic Heart Disease by the Schoot Method. By Charles L. Greene, M. D., St. Paul. [Reprinted from the *Northwestern Lancet.*]

The Diagnostic Value of Erlich's Diazo Reaction. By Charles L. Greene, M. D. [Reprinted from the *Journal of the American Medical Association.*]

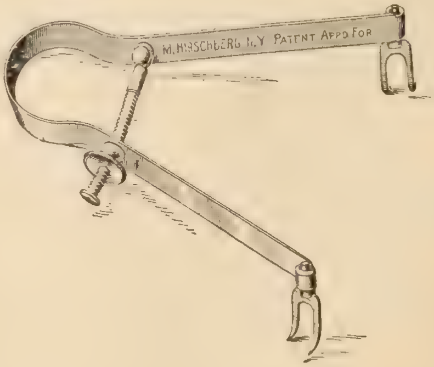
A Suggestion bearing upon the Treatment, by a New Method, of Persistent Vomiting. By Charles L. Greene, M. D. [Reprinted from the *Medical News.*]

New Inventions, etc.

A NEW AUTOMATIC RETRACTOR.

By John T. R. Roeloffs, M. D.

The new self-retaining automatic retractor shown in the accompanying illustration forms an addition to our surgical armamentarium which will be of practical use rather to the general practitioner than to the specialist, inasmuch as it enables him to a great extent to dispense with manual assistants, who often are not easily obtained. This retractor will automatically separate and retain in position the borders of a wound cavity, and will therefore be especially serviceable in the curetting of abscesses, in the extirpation of atheromata or other tumors of the skin, in the ligation of blood-vessels, in the search for splinters and other foreign substances, in suturing nerves and tendons, in tracheotomy, etc. The author is well aware of the fact that a number of instruments have been devised for a similar purpose by others; each one of these instruments, however, is available only for the special operation for which it has been constructed. Such instruments are the dilating hooks of Zarniko and Barth for opening the mastoid process, the dilating elevators of Roser, Fehleisen, and Bose, and the double hook with rubber connection of Wells, which are so much used in tracheotomy. The instruments of most varied applicability thus far constructed seem to be Broz's dilator, which is operated by a screw in the same manner as is the well-known nose speculum of Fraenkel, and a retractor devised by Wright; the former, however, is rendered unhandy by its screw mechanism, while the latter can not be used for the separation of the borders of a wound on account of the immobile attachment of the hooks to the side of the spring shafts.



The automatic retractor which I have devised consists of a strong steel spring, the tension of which may be regulated by a screw the one end of which is articulated with the left spring shank of the retractor, while the other end slides in an opening of the right shank; this regulation is of importance while working in flabby tissue (abscesses, etc.). Each of the spring shanks, which are four inches in length, bears on the outer surface of its end a hollow socket in which the hook, hanging in it vertically, can rotate freely; thus the blades of the latter, be they sharp or blunt ones, will adapt themselves automatically to the directions of the borders of the wound. Each socket shows a vertical cut through which, while inserting or detaching the hooks, the little hump is to slide that is attached to the head of the hook shaft for suspension. Thus by a very simple method it is made possible, as circumstances may require, to use different hooks on the same retractor; as the instrument is now being manufactured according to my suggestions by the firm of Max Hirschberg, 116 Second Avenue, four pairs of hooks—viz., two sharp and two blunt ones, wide and narrow—will be furnished with every set; other attachments, however, might easily be constructed —for instance, speculum branches, etc. Owing to its simple structure and the possibility of taking it completely apart, the instrument can easily be cleansed and sterilized; it is made entirely of nickel-plated steel, and therefore will prove durable if only the tension of the spring is removed each time after using by loosening the screw. Every set of the instrument, comprising the retractor and four pairs of hooks, is put up in a neat pocket case.

Miscellany.

American Notes by a Visitor.—Jane Buchanan Henderson, M. D. Brux., L. R. C. P. etc., writes as follows in the November number of the *Glasgow Medical Journal:*

"During a recent short visit to the United States and Canada, I took the opportunity of visiting a number of general hospitals, asylums, and other public institutions, but as space will not permit me to enumerate everything I saw, and as a mere catalogue of names and places would not be appreciated, it is my aim simply to call attention to a few points that appear to be of general interest; omitting a description of those points with which most travelers would naturally be quite familiar. It may be well, as a preliminary remark, to remind the reader that each State in the Union is a self-governing body, and that each province in the Dominion of Canada makes its own laws for local government, consequently a statement, which may be quite correct when made about one city or district, is not necessarily true about any other city or district on the American Continent. In consequence of this we find that the laws relating to the time required for medical studies vary very much in different localities—thus, in New York, four years of study are required—namely, four winter sessions and one summer session; in Ontario the license to practise can only be obtained after five years of study. This appears to be a comparatively new regulation passed by the Ontario Medical Council, and having a rather anomalous result. The Toronto University and Trinity University, Toronto, have not yet altered their regulations so as to make them coincide with the provincial law, and they still bestow their degree of M. D., C. M., or M. B., respectively, at the end of a four years' course of study, so that it is possible at present for a graduate to hold the degree of M. D. of a local university of good standing, and at the same time be legally unqualified to practise in the city or province. Some States require the student to pass a preliminary examination, others do not require this. The State or Provincial examination, without which it is illegal to practise, does not confer a license to practise in any other State or Province, so that a doctor changing his residence to another State would require to pass a fresh examination. The medical schools that were visited appeared to be very well provided with the necessary teaching appliances, and there seems to be no special reason why the preparation obtained there should not equal that obtained in our best British schools.

"The New York Institution for the Instruction of the Deaf and Dumb is beautifully situated on Washington Heights, overlooking the Hudson River. It is a handsome building, with several detached blocks for the laundry, engine-house, and junior school. No expense is spared in keeping up a high standard of health and efficiency, in order to send the graduates out to fight the battle of life unhampered, either physically or mentally. There are about four hundred scholars, some of whom are supported by their friends, while others are supported by the town or county from which they come. Being vacation time, the most of them were away, while the few who remained were playing at baseball, and, as far as could be judged, seemed capable of holding their own as well as their more fortunate opponents. A splendid gymnasium has been fitted up with all kinds of apparatus, and each scholar has to undergo a physical examination, so that the most suitable exercises may be ordered for him, and the examination is repeated at regular intervals in order to test the improvement. A trained nurse is a regular member of the staff, and any cases of illness are immediately transferred to her care, while infectious cases are isolated in a separate building. A dentist, who is a lady, makes regular visits, and is responsible for keeping the teeth of the children in good order. The weekly washing must be quite a formidable undertaking, as it includes several thousand towels. We were told that each of the four hundred scholars is allowed twenty-three towels each week—three every day and five on Saturday, the bath day. They are never allowed to use a towel twice. The object of this is to prevent the spread of ophthalmia, or anything infectious that might arise, and it is reported to be most effectual. In contrast with this may be mentioned a smaller school where three roller-towels, each about two yards long, were considered sufficient for thirty boys for two or three days. It would be interesting to have some authoritative statement as to the number of towels that should be supplied to each individual in public institutions.

"Of the general hospitals visited, the one best known by name was the Johns Hopkins Hospital at Baltimore. It is a large red building with a dome, occupying a conspicuous situation overlooking the city. The wards are in blocks, connected with the main building by airy corridors. An octagonal ward was pointed out as a feature of interest, but the majority of the wards are of the ordinary rectangular shape. I believe the method of ventilation is something special. We noticed cage-like structures made of wire under each bed, which were probably protections over the points of entrance of the fresh air, but owing to the very uninteresting nature of the guide who escorted us round, our visit here was a most grievous disappointment. The screens used in the wards were of a very good design, being large enough to surround the bed, and yet very easily moved from one place to another. They folded in three. The centre leaf was a solid wooden frame running on little wheels with rubber tires; the two outer leaves were very light in the frame, and were supported only by their attachment to the central woodwork; the whole was filled in with clean white curtains.

"The Presbyterian Hospital in New York is new, and has been built with all the latest improvements, and antiseptic precautions are carried out to the minutest detail, regardless of trouble or expense. The hospital was destroyed by fire some years ago, and the wards now in use have been built since then. The wards and corridors have rounded corners, both at the ceiling and the floor, so as to allow no crannies for dust and microbes. The operating theatre is entirely of marble or slate, including the doors, which are solid blocks of dark marble smoothly polished. Muslin pads take the place of sponges as a rule; but when the ordinary sea sponge is used, it is not considered fit for use a second time. A dressing room for the nurses is provided, and they have to wear a special linen dress, made with sleeves reaching only to the elbow, whenever they attend a case in the theatre. Even the surgeon is looked after and provided with a special pair of rubber shoes to be worn in the theatre. The metal fittings and all the water pipes are nickel-plated; the instruments are of the latest and most improved pattern; even the little block that is used to support the pelvis when applying a spica bandage has not escaped, but is made of metal and plated with silver. The mortuary is clean and spacious, and when a body is waiting for removal or examination, it is kept in a closed-in compartment, within which a strong draught of air, cooled by ice, plays around it. In the casualty department a special ward awaits the reception of cases of sunstroke, so that they can be treated promptly and effectively on admission. Most cases of sunstroke have an extremely high temperature—110° and upward; the treatment is therefore aimed at reducing this temperature by rubbing ice all over the body, or in less severe cases by means of a cold bath, and stimulants are administered to overcome the collapse. The ambulance system is worked in the same manner as the fire brigade system. The city is divided into areas, each area being served by the ambulance of a special hospital. The Presbyterian Hospital has three beautiful ambulance wagons. Horse and driver are always on duty, ready to respond at a moment's notice to any emergency. The horse stands outside the shafts fastened by a halter to the stable wall; when the electric gong sounds a police call the halter is automatically loosened; the horse steps into his place; the harness drops down and is fastened by a single attachment; and before the sound of the gong has time to die away the wagon is well on its way to the scene of accident or suffering.

"The hospitals in America, like those at home, are supported to a certain extent by the voluntary contributions of the benevolent, but it is also a general rule that each patient shall pay while in the hospital. The scale of charges varies with the locality, and also with the style of accommodation provided. In New York, where everything is dear, the hospital rate is also high, so that in the hospital I have been describing a patient in the public ward is expected to pay seven dollars a week, while for the private rooms the charge may be upward of forty or fifty dollars a week, and the patients in the private rooms pay a doctor's fee by arrangement in addition. A dollar is equal to four shillings sterling fully. In Philadelphia, in the Women's Hospital, the scale of charges is lower—fourteen to twenty dollars being the charge in the private rooms, without any additional fee for the doctor. In Canada, patients may be admitted to the public wards on payment of two dollars and a half. In all cases, patients unable to pay may be admitted free, but, in some places at least, such cases are charged to the municipal authorities. In Canada it is not the rule to have any place corresponding to our workhouse or poor law infirmary; but as there is in the cities a fair proportion of infirm and indigent people, provision has to be made for them by private charity, and if the form of charity meets with approval a grant may be awarded out of the municipal funds. This system of combining private charity with municipal support appears to have a distinct advantage in preventing so much overlapping of agencies as we sometimes see, or imagine we see—where we find accommodation provided out of the rates and yet refused by those for whom it is intended, simply because it will cause them to feel they are paupers, while these very individuals are willing to take relief in any shape from private persons or private charities. There is, of course, another side to the question. As these private charities are not under the control of the municipal authorities, the magistrates can not compel them to admit any particular case; neither can they compel any one to remain there when they have been admitted. As a consequence, a few of these poor folks land in the common jail, simply because there is no place else for them. If they have no place of abode and no visible means of support they may be committed on a charge of vagrancy, and if no alteration occurs in their circumstances by the time the sentence has expired there is nothing to prevent them being recommitted on a similar charge. Such cases are treated leniently in prison. If infirm, they may be treated in the prison hospital ward, and special diet may be ordered for them. It is said that some of the old men prefer the prison to the private homes, and ask the magistrate to send them there. In the prison there are more rules, so that they are less likely to be interfered with by their neighbors. The routine life is not disagreeable, and the knowledge that they are not at liberty to go enables them to settle down peacefully.

The Hospital for Sick Children at Toronto was built as a memorial of Her Majesty's Jubilee, and is a memorial worthy of the event. I need not stay to describe the handsome façade, the staircase decorated with stained-glass windows, the airy wards, the well-equipped theatre, with photographer's dark room leading off it, and which was seen to contain numerous well-made casts of interesting cases. In the hot summer weather this remains practically unoccupied, and patients, nurses, and resident doctors are transported to a home on the island, looking toward the lake, and receiving the cool, refreshing breezes from the water. When visiting this lakeside home one warm Saturday afternoon the wards were almost empty, but we found plenty of little patients who had been carried out or wheeled out in their beds on to the wide verandas, where they were able to enjoy the brightness and the breezes. This summer hospital has a theatre, where operations can be performed if necessary, and it has also a little schoolroom where the tedious chronic cases and the convalescents can have a few short lessons. While on the subject of the summer heat, I may mention a form of charity which strikes a stranger with the force of a novelty—I refer to the free distribution of ice to the poor people of New York. Ice in summer is usually regarded as somewhat of a luxury; but in New York it becomes a necessity, to prevent the too rapid decomposition of food and consequent danger to health. So one of the newspapers (the *Herald*, I think) has started a fund to provide the ice, while the *Tribune*, not to be outdone, has a fund for sending sick babies with their mothers to the seaside or country for fresh air for a day at a time.

"In some districts where there is no hospital for infectious diseases, when a case is notified, the medical officer sends a large notice to be appended to the entrance door, stating the nature of the illness that exists within; and this notice has to remain conspicuous all the time that there is any risk of infection, so that if any strangers enter it is at their own risk. The color of the paper on which the notice is printed varies with the disease. I can not supply a list of the various colors used, but I saw the scarlet-fever notice printed on a sheet of red paper. In some cities arrangements are made for the immediate bacteriological examination of all cases of suspected diphtheria. The examination is carried out by the health officers, and, from a notice which was posted up in a public dispensary in Philadelphia, I read the instructions issued to the medical officer of the dispensary on this matter, and from this I gathered that the apparatus necessary for obtaining the specimen, and for packing and conveying it to its destination, were to be obtained at the nearest police office.

"There are many other topics which might be considered interesting, but as it would extend this paper unduly, notice of them must be postponed in the meantime. I can only express a hope that the preceding notes will be considered worthy of perusal by those who have visited America and by those who have not yet done so."

Yellow-Oxide-of-Mercury Ointment.—Dr. George F. Suker, of Toledo, Ohio, writes to us as follows:

"This ointment, as we all know, is extensively used in ophthalmic practice. Yet it has one drawback, and that is this—it readily loses its therapeutical powers. Many of us have, no doubt, noticed that it acts admirably while fresh, but loses its efficiency on standing.

"Now, why is this? Dr. Holt (*Med. Week*) says that the deterioration is due to the light. He maintains that light decomposes the ointment. This is actually so. In view of this fact he recommends it to be dispensed in jars which are impervious to the rays of light. The lids of these not to be of celluloid, but of hard wood or metal; and an excipient should be employed that will not become rancid.

"Dr. Holt advises the following formula:

℞ Hydrarg. præcip. flav......... 0·05—0·2 part;
Lanolin,
Paraffin. liq., } āā............ 3 parts;
Aq. dest. sterilis.............. 4 "
M., ft. ung.

"This formula is well worth trying, and if it is dispensed as above stated, you will find it maintains its efficiency for any length of time."

An Attempt to Cultivate Parasitic Protozoa from Malignant Tumors, etc.—No. 352 of the *Proceedings of the Royal Society* contains an abstract of a paper by Mr. Samuel G. Shattock and Mr. Charles A. Ballance. In a previous communication, says the writer, the authors had shown that no organism belonging to the protophyta could be cultivated from malignant new growths, and in addition that carcinomatous and sarcomatous tumors from the human subject could not be transplanted so as to produce infection in the lower animals.

The researches of Nils Sjöbring and Soudakewitch, and, in Great Britain, those of Ruffer and others, had shown that in sections of carcinoma stained by special methods there were present certain bodies which those observers alleged to be parasitic protozoa. The authors then determined to try whether any protozoon could be cultivated from malignant new growths; and, as it is well known that the *habitat* of the common amœba is damp sand or pond water, they decided to select sand and water as the medium for their investigation. Their first experiments were imperfect, for the reason that sufficient care was not used in the sterilization of the materials and in the precautions taken during microscopic examination.

The only experiments in which they found living amœbæ were certain of the earlier, in which a possibility of external contamination was not rigidly excluded. The following is their final method of procedure:

Sand.—Silver sand, from which the finest part had been removed by sifting, was baked in a shallow thin iron dish over a large ring Bunsen for an hour. It was then transferred to the small deep capsules and Petri dishes about to be used, which had been previously baked for an hour at 302° F. in the hot-air sterilizer. The capsules so charged were then baked for an hour at 302° F.; on removal from the sterilizer the sand was heaped up on one side by shaking the capsule so that when the water was added part of the sand was submerged and part remained above the level of the fluid. The object of this proceeding was to obtain a littoral in order to insure better aeration for any protozoa that might develop.

Water.—This was distilled and collected in a sterilized flask; it was subsequently boiled for from four to five hours with the object of rendering it quite sterile.

Transfer of the Tumor.—The malignant tumor was received fresh from the operating theatre, the redundant tissue around was removed with sterilized scissors; then, with knives previously sterilized at 302° F. for an hour in an iron box, pieces of the growing edge were cut away, and transferred with sterilized forceps to the capsules; they were laid on the sand just beneath the water level. Two kinds of capsules were used: one, the ordinary Petri, the other considerably deeper, of smaller diameter, and furnished sometimes with a cover, like the Petri, at other times not.

Storage of the Capsules.—The capsules thus prepared and infected were placed between sterilized double dishes; the covers of these dishes were raised for a short distance by means of blocks of wood which had been soaked in solution of corrosive sublimate; the height was such as to allow free entrance of air, but not sufficient to expose the mouth of the lower dish. The double dishes were first sterilized by washing with sublimate solution and absolute alcohol and by heat.

The double dishes were finally placed, each pair, upon a sheet of glass beneath a capacious shade, both of which had been cleansed with sublimate solution. Most of the small, deep capsules had their covers removed as they were placed between the double dishes. The Petri capsules remained covered throughout. All the experiments were conducted in a private laboratory continuously heated.

Method of Microscopical Examination.—A glass rod and slide were sterilized in the flame, and allowed to cool. The shade was removed and the upper dish raised sufficiently to allow of the passage of the rod to the capsule. A little sand was then taken from three or four places along the littoral or from the neighborhood of the piece of tumor and transferred to the slide; occasionally a hole was dug with the rod above the water level, and some of the deeper sand removed. The sand so removed was gently stroked with the rod on the slide until displaced from one end to the other; the slide was finally inclined so that enough fluid left the sand to make a microscopic preparation.

The examination was made with a one-twelfth apochromatic oil-immersion Zeiss, oculars 4 and 8. Occasionally a few drops of beef-peptone broth were added to the capsule; and as the water became low from evaporation more was supplied.

In all the capsules bacteria developed, a fact, says the writer, which the authors regard as important, inasmuch as such would furnish a pabulum for the growth of any protozoa that might develop.

The authors then give a table exhibiting the results of experiments made in twenty-three capsules; there were used nine scirrhous carcinomata of the breast, and five sarcomata from different sources; the sarcomata comprised one from the human biceps, one a melanotic growth of the cheek, two melanotic sarcomata from horses, and a spindle-celled mammary sarcoma from a dog. In the case of carcinomata the authors confined themselves to the typical scirrhus of the breast, for the reason that in new growths involving such superficial parts as the lip, tongue, etc., there is a chance not only of protophytic contamination, but also of protozoic, especially as certain protozoa are normal inhabitants of such mucous passages as the vagina and intestine.

The result of all these experiments was negative. No traces of protozoic life, whether as spores or amœbæ, were encountered, although the examinations were made at regular intervals and repeated for periods of many months.

It may be added that a similar method of investigation carried out with *normal tissues* was equally negative in result.

The experiments so made were nineteen in number: seven were with human tissues (five subjects), muscle, pancreas, spleen, mamma; and twelve with the tissues of three dogs, submaxillary salivary gland, muscle, testicle, pancreas, kidney, and spleen.

The authors obtained equally negative results with vaccinia, molluscum contagiosum, the pancreas of *Salamandra maculata*, and muscles of the frog.

Vaccinia.—The experiments were made with freshly excised skin of the calf on which mature vesicles had been raised. They were carried out because bodies similar to those viewed as parasitic in carcinoma have been demonstrated in the epithelium of the vaccine and variolous vesicle.

Molluscum contagiosum was experimented with, because certain observers have held that the molluscous bodies in the lesions are protozoa.

Pancreas of Salamandra maculata was used because it has been alleged that the paranucleus seen in certain of the epithelial cells is a protozoon.

Muscles of the frog were used because it has been stated that active amœbæ may readily be raised by some such method as that described from the tissue in question.

The experiments of the authors, says the writer, conducted with the precautions detailed in the paper, especially the avoidance of contamination from the integument, prove that this is untrue.

The general conclusion the authors draw from the different series of experiments recounted in the paper is that by the method adopted no protozoa can be cultivated from the healthy living tissues, from malignant tumors (at least such as are not directly exposed to external contamination), from the lesions of vaccinia and molluscum contagiosum, from the salamander's pancreas, or from the muscles of the frog.

The authors record, in addition, a certain number of experiments made upon animals by means of sand infected with carcinoma and sarcoma, and containing amœbæ which later experiments showed to be adventitious. These experiments, which were all negative in result, included intravenous injection in dogs, the repeated vaccination of the skin in white rats, and intraperitoneal insertion in white rats.

Having previously found it impossible to raise a growth of carcinoma in any of the lower animals by transplantation of recent human carcinoma, they thought it possible that, if the tumor was first incubated outside the body, the hypothetical protozoon might pass into some phase which would enable it to convey the infection. With this object, says the writer, pieces of carcinoma incubated at the room temperature in milk, potassium-oxalate plasma and dilute broth were inserted into the peritoneal cavity of white rats, but with negative results.

In the case of two rats, the material used consisted of scirrhous carcinoma, which had been buried in a country garden for six weeks; the animals were kept alive for six months, but remained unaffected with the disease.

Under the head of Treatment are recorded the negative results following the subcutaneous injection of fresh aqueous extract of carcinoma and sarcoma in cases of both these diseases, as well as the similar injection of fresh sheep serum.

The Medical Society of the County of St. Lawrence, N. Y., held its semi-annual meeting at the St. Lawrence State Hospital, Ogdensburgh, on October 15th.

Dr. B. F. Sherman introduced Sir William Hingston, of Montreal, as a guest, and he was tendered the privileges of the floor and invited to take part in the discussions. In response Dr. Hingston spoke of the pleasure it afforded him to be present and complimented in high terms the hospital, saying that it was equal to the best.

The censors reported favorably upon the following gentlemen, and they were duly admitted to membership: Dr. Elbert M. Somers, Jr., of Ogdensburgh; Dr. Harold J. Morgan, of Ogdensburgh; Dr. Flavius Packer, of Ogdensburgh; Dr. Sidney D. Wilgus, of Ogdensburgh; Dr. Warren L. Babcock, of Ogdensburgh; Dr. W. H. Kidder, of Ogdensburgh; and Dr. Joseph C. Willson, of Canton.

Dr. J. H. Brownlow, the vice-president, then delivered an address on Some Factors in Medical Education. He said, in part: "Life is an immortal commission, imposing upon its possessor obligations, duties, and responsibilities that demand for their fulfillment the highest and noblest development of man's capabilities. Personal responsibility is unavoidable. Duties assigned must be conscientiously performed; obligations unfalteringly met; responsibilities discharged with manly courage and heroic bravery.

"Conscious of my own inability to present fully even the minor factors involved in this subject, still I cheerfully undertake the duty incident to the office to which you have chosen me, and ask your kindest consideration while I attempt to review some of the more salient characteristics of medical culture—the duties and responsibilities of the medical profession. To meet in a moderate measure the demands made upon the physician of to-day necessitates the possession of scientific resource of as high, if not of a higher order, than that required in any other department of intellectual activity.

"Reasonable excuses can not be found and given for failure to perform duties that have been assumed or imposed in our professional work and associations. The injury inflicted in every failure is an unknown quantity, an undetermined result. To hold it in light estimation or disregard it is a betrayal of a sacred trust and results in a self-inflicted punishment incapacitating the delinquent for the performance of other duties. To be a victim to the habit of failure is demoralizing and degrading, and to become addicted to it is a voluntary surrender of the noblest elements of our manhood, the wellspring and source of our highest and purest enjoyment—the power to do.

"It is a fact, the truth of which can not be denied, that in too many of our communities the relations existing between medical men are not only unfriendly, but too frequently strained and embittered by jealousies, uncharitableness, intolerance, and even bigotry. This unhappy and demoralizing state of affairs, when it exists, arises very often from some slight misunderstanding or neglected duty, the prevention of which might have been secured had we been as eager to accomplish it as we would be to plead an excuse for many of our own shortcomings. When differences exist between honorable men they can invariably be satisfactorily adjusted without in any way compromising their personal dignity. Too often when professional dignity is considered as a barrier it is nothing more or less than long-eared stubborn mulishness. There can be no question but that it is for the best interests of professional men everywhere to treat each other with the utmost forbearance, consideration, and charity. No one possesses all the elements of professional nobility without some mixture of human dregs, nor can one be found totally wanting in the sublimated element of manhood.

"Among other factors in medical education, and by no means of inconsiderable force, are medical associations and societies. The potency of these organizations as educators is altogether too frequently underestimated, misunderstood, and imperfectly utilized by many members of our profession. There is scarcely a section of our country to-day in which two or more medical men can not be found, and a society formed, if an earnest effort is made in this direction. Time devoted to such a purpose is not only profitably and pleasantly spent, but the emoluments and rewards that must inevitably be enjoyed as the fruit of the undertaking can never be fully determined.

"There is a personal responsibility to the community that can not be avoided incident to the exercise of the rights and privileges accorded to the active members of the medical profession. In meeting these responsibilities and discharging the obligations and manifold duties of our professional life some of the most prominent factors in our medical education will be involved. I do not refer to that technical education that belongs to the lecture room, but rather that higher, nobler, and broader education, the leading out and development of those natural and inherited resources without which success can not be achieved in any department of life. To enumerate these factors and dwell upon their particular characteristics would necessitate a review of the social, intellectual, political, and moral factors that are constantly arising in every community, and demand for their adjustment and settlement the ripest scholarship and maturest judgment. To the cultured medical man, more than to any other citizen, does the community look, and from him it expects the greatest assistance in its most trying emergencies.

"The physician who fails to teach his charge not only in the particulars having a direct bearing upon their own health but in the observance and consideration of the amenities of life that may exert an unfavorable influence upon those with whom they may be associated, is not performing his whole duty." In closing the speaker paid a glowing tribute to the profession and to the lamented Pasteur.

Upon motion, the society extended a vote of thanks to the vice-president for his eloquent address.

Dr. Mosher, who is to leave the country for a course of study in Europe, tendered his resignation as president, but the society declined to accept it.

Dr. A. C. Drury, of Canton, then read a paper on The Bicycle: its Use and Abuse. In opening he touched upon the popularity of the wheel and its place as a social and economic factor. The ill effects of imprudent riding were pointedly set forth, and the present saddle was severely "scorched." "Violence or irritation applied to the rectal or perineal region is a fruitful and frequent cause of prostatitis and hypertrophy of the prostate in the male, and in the female of effects which are demoralizing morally as well as physically," he said. "I think this form of saddle," he continued, "will change the shape, not only of the soft parts, but by continued pressure affect the yielding bony parts of the young girl, drawing the tuberosities and spines of the ischia nearer together, and then the danger to pelvic organs in the form of uterine versions and flexions or cellulitis will not be long in making themselves felt. And the curse of Eve shall again be multiplied, and in pain and sorrow shall she bring forth children. I think we shall find as time passes that the evils of bicycling have scarcely begun to be appreciated. I do not mean to condemn the proper or moderate use of the wheel, but the immoderate use of it. As a factor in business, I think it can be utilized to advantage. It can be used by the messenger boy and the letter carrier, and in the country for errands of all kinds. But as an implement of sport I think that with the present saddle it is not fit for ladies to mount at all, and that the persistent immoderate use of it by the young man as at present practised will prove to be most injurious."

The paper was discussed by Dr. Wise, Dr. Sherman, Dr. Brownlow, and Dr. Hanbidge, all of whom agreed that bicycle riding might be productive of harm if the saddle was of bad shape or improperly tilted, and riding was immoderately indulged in. All agreed, however, that the moderate use of the wheel, when the rider maintained a proper position, and had a saddle properly tilted, supporting the body on the tuberosities of the ischia instead of the soft parts, was a means of obtaining a valuable and pleasant exercise.

Dr. Silas E. Brown, of Ogdensburgh, then read a paper on Hysterectomy, Indications and Methods, with Report of Cases.

Dr. Earl, of Morristown, read a paper on The Comparative Merits of Medication and Hygiene in the Treatment of Disease. He treated his subject under the following heads: 1. The importance of a young man's inquiring into the comparative merits of medication and hygiene. 2. Faith in drugs. 3. Care in the use of new medical preparations. 4. The great value of our pharmaceutical boards and the great reliance to be placed upon our pharmacopœias. 5. Care to be used in permitting our names to be used as a reference for special preparations, the product of any particular house. 6. Drugs that have received the sanction of the profession. 7. Some of the ill effects from the use of drugs to excess. 8. The part Nature plays—furnishing the beneficent hygienic surroundings—*i. e.*, the sunlight, the water, the oxygen. 9. The importance of cleanliness and cheerful surroundings, coupled with the proper drugs and their judicious employment.

The paper was discussed by Dr. B. F. Sherman, who emphasized the salient points.

Dr. Dodge, of Massena, followed with a paper on The Summer Diarrhœa of Children. The importance of the disease, on account of its great mortality, was pointed out; also the necessity of ascertaining and removing the cause, of clearing the alimentary tract of all irritating and toxic matters, and of keeping strict watch over the child's food, its quality and preparation. The general principles of treatment were outlined.

Dr. Wise called attention to the fact that a large number of the diseases of children were preventable. Milk being the proper and common article of food, it was evident that care must be taken to obtain milk of good quality, clean, and sterile. The speaker described the proposed methods of caring for the milk supply of State hospitals, the milk to be run through a separator to remove dirt, pasteurized by heating to 160° or 170° F., then kept in cool storage at a temperature of 40° F.

The next paper was by Dr. Madill, on The Indications for Operation in Appendicitis. He said: "I do not believe there is a question in medicine or surgery which requires the unbiased opinion and good judgment that is demanded in deciding in a given case the question 'Shall we operate now or wait?' It is seldom that any two cases present the same constitutional symptoms and like physical signs. During the past seven years I have seen fifty-two cases of appendicitis. Most of them I have seen in consultation, and many of the cases had passed the stage of simple inflammation of the appendix to that of abscess more or less extensive. Of the fifty-two cases I operated in thirty-six. The remaining sixteen cases were treated by rest and the ordinary mild treatment. Of the sixteen patients for whom I did not advise an operation at the time, one went to New York later and had the appendix removed; complete recovery followed. One for whom I advised the operation to be postponed for twenty-four hours soon after went into collapse and died in a few hours, evidently from perforation of the appendix or rupture of a small abscess into the peritoneal cavity. The remaining fourteen recovered completely and, so far as I know, without subsequent attacks.

"Of the thirty-six patients operated upon, all recovered but one, and this patient was in almost a moribund condition, the operation consisting in simply making an incision and evacuating a large iliac abscess; fourteen were operated upon on or before the fourth day of the disease, twelve from the third to the fifth day, and the remaining ten on from the fifth to the twenty-second day of the disease.

"In nearly every case I have been called in the capacity of surgeon when the case has passed the early stage and in most cases pus had already formed. I believe that in many of the cases an operation was too long deferred—*i. e.*, the patient had been reduced in strength and flesh, and convalescence, although actually perfect, was unnecessarily slow, and further great risk of perforation was taken. In cases which I saw early I placed most reliance on the pulse, temperature, and tenderness, although the latter symptom, I think, is the least to be depended upon. Given a case with marked abdominal symptoms and rapid pulse, I believe that an immediate operation should be done without regard to the temperature or the length of time from the onset of symptoms. In a case in which after twenty-four hours the pain and tenderness are only moderately severe, the temperature 100° or 101°, and the pulse 100 or 110, I should advise that the operation be postponed. Even in cases in which slight swelling can be found on the second or third day, unless there is considerable elevation of temperature with rapid pulse, I would wait, hoping that resolution might take place. If after the third day the tumor remains or increases in size, the temperature does not become lower, and the pulse is more rapid, I think we can conclude that resolution will not take place and the operation should be done. In cases with a moderately high temperature, pulse 100 or 110 and no tumor, I think we are justified in waiting longer for resolution and subsidence of symptoms.

"In cases in which peritonitis develops very quickly without any warning, what shall be done? The patient is in a condition of shock, perhaps in collapse, and an anæsthetic may be dangerous. I believe that it is better to establish reaction first by the usual remedies, and as soon as the pulse and general condition improve sufficiently cœliotomy should be done.

"From my experience in treating cases of general infectious peritonitis due to other sources, I have always believed them to be fatal in spite of free incisions, irrigation, and drainage, but in the *Medical Record* of March 30, 1895, Dr. McBurney reported twenty-four cases of operation with fourteen recoveries. The operation consisted in thorough irrigation with saline solution, the introduction of drainage-tubes to the bottom of the pelvis, and packing long and numerous strips of iodoform gauze into all the cavities. Since reading the report of these fourteen recoveries I have become encouraged, and in the future shall not sit down and surrender the case until this plan of treatment has been followed. Although my results have been as favorable as we can well expect in the treatment of this disease, I do not pretend to say that the delay in operating in a large number of the cases was justifiable, but on the contrary I believe it was negligent to delay surgical interference so long."

Dr. M. E. Smith, of Colton, reported some further Experiences in the Use of Antitoxine which were highly gratifying. He cited two additional cases which he had successfully treated since the last report. He showed samples of the antitoxine in the liquid and also in the dry form. He also showed the syringe which he employed in making the injections. From his personal observation he believed this agent to be one of the greatest discoveries of the nineteenth century. In answer to a question, he stated that in none of the cases had a bacteriological examination been made.

The following biographical sketch of the late Dr. J. S. Gale was read by title:

Dr. James S. Gale was born in Orwell, Vt., January 30, 1830. He early showed a fondness for the medical profession. After graduating from Castleton Academy he went to New York to the well-known firm of McKesson & Co., and at that time commenced the study of medicine, which he continued with his father, Dr. Nathan Gale, a prominent physician of that part of Vermont. He graduated in 1853 from Castleton Medical College, an institution of high rank at that time. He practised with his father two years, and then came to Canton. He enlisted in 1861 and went out with the Sixtieth Regiment as surgeon. On account of chronic dysentery he was obliged to leave the service in 1863. In 1867 he returned to his native town and practised his profession till 1885. He then returned to Canton, where he lived until his death in August, 1894. He was for four years one of the board of medical examiners for the Pension Department. Dr. Gale had an extensive practice, was a conscientious physician, and much respected by all who knew him.

The president appointed the following gentlemen to prepare papers for the next meeting: Dr. Hutchings, Dr. Bridges, and Dr. Hanbidge, of Ogdensburgh; Dr. Willson, of Canton; Dr. Allen, of Gouverneur; and Dr. Dowsey, of Madrid; to lead in the discussion of the papers respectively: Dr. Babcock, Dr. F. F. Drury, Dr. McIlmoyl, Dr. J. C. Sherman, Dr. Hossie, and Dr. Daly.

The next menting will be held in Gouverneur in May, 1896.

The Treatment of Morphinism.—In the *Bulletin général de thérapeutique* for September 15, 1895, there is an article by M. Gilles de la Tourette an abstract of which appears in the *Revue Internationale de médecine et de chirurgie pratiques* for November 10th. According to the author, there are two methods of treating morphinism, the immediate suppression of the poison and the slow suppression—that is, diminishing the daily dose of morphine progressively. Each of these methods, he says, has its indications. Generally, when patients have been in the habit of taking eight or ten grains of morphine a day, immediate suppression is the best way, as the other method requires too long a time to break off the habit.

The patient should be placed under conditions peculiarly favorable to the treatment. Isolation in a hydrotherapeutic establishment with a special physician attached to it is essential, as the treatment can be more strictly carried out there than at home. The patient's organs should be examined, for in cases of cardiac affection or angina pectoris immediate suppression may produce syncope. The digestive canal should also be examined and the digestive functions regulated. The hypodermic injections of morphine must be given regularly, in the morning, at noon, and at night, as these are the three most important hours of the day. For this reason isolation is particularly necessary, for the habitual tendency of a patient to take a hypodermic injection at any time when he feels the need of it presents a difficulty hard to overcome. If the patient has been in the habit of taking fifteen grains of morphine a day, half the dose only should be allowed on the first day of the treatment; generally, says the author, on the first day two thirds of the dose are suppressed, on the third day it is diminished to two grains and a half, and on the fifth day no morphine is given at all. During the first twelve hours the treatment does not provoke any troublesome symptoms, and the patient feels comparatively well. At the end of twenty-four hours, however, the following symptoms supervene: 1. Syncope, which, if very serious, is sometimes fatal. If there is no cardiac affection, it is of slight importance. For this symptom an injection of from a grain to a grain and a half of morphine is given. For vomiting in these cases champagne, iced grog, etc., are given. 2. Diarrhœa. This symptom should be carefully observed, for, according to Sollier, the poison is eliminated by the intestinal canal. There are, however, cases where the diarrhœa becomes so intense that it results in true morphine cholera, and in these cases this symptom must be treated. For maniacal excitation and delirium soothing spongings or baths are prescribed. During convalescence the diarrhœa should be carefully watched, as it may persist for three or four weeks, often making it necessary to resort to the injections. It is the same in regard to insomnia. If the patient can remain for a month or two longer in a special establishment, the rest will be a valuable aid in the treatment. Baths, douches, tonics, and good food should be prescribed to insure the repair of the physical condition and to avoid the troubles of convalescence. The patient should be weighed, for an increase in weight shows the beneficial results and a good condition of the digestive functions. If practicable, it is well to send the patient away in order to avoid all causes capable of provoking a return of the habit.

With regard to slow suppression of the drug, says the author, this method does not give such good results, owing to the length of time required for the treatment, which is from two to three months. It fails, he says, at the least eight times out of ten. Professor Charcot employed this method as follows: The patient is made to give up from the beginning a third of his daily dose of morphine. 2. The thebaic extract is substituted for morphine; for example, for three eighths of a grain of morphine from a fourth of a grain to three tenths of a grain of opium is given, to which may be added from forty-five to seventy-five grains of potassium bromide where there is pain in the legs or excitement.

When the morphinism has yielded to the treatment the use of the bromide and the opium should be stopped, as they are no longer useful. It is then a question only of ten or twelve days before a cure is completely effected.

Common Salt as a Remedy for Ringworm.—F. J. Reilly, M. R. C. S., states in the *British Medical Journal* for November 23d that he has used common salt as a remedy for ringworm for the past seven years. Children, he says, who are suffering from tinea tonsurans are sent to the seaside and almost invariably improve in the salt air. This improvement has hitherto been ascribed to the general favoring influence of the open-air life and improved hygienic conditions under which children live at the seaside. But, says the author, when we remember the fact that the air near the sea is impregnated with minute particles of sea water containing in solution as it does a large proportion of sodium chloride, may we not reasonably ascribe the disappearance of the skin disease to this circumstance? This fact, he says, arrested his attention and led him to think that common salt might prove a valuable remedy in ringworm. Accordingly he prepared a solution and used it in the next three cases which he was called upon to treat, applying it to the diseased scalp every night for five nights and washing it off the following morning with ten-per-cent. boric-acid soap. In less than four weeks a cure was effected in each case.

The New York Academy of Medicine.—At the last general meeting, on Thursday the 4th inst., the order for the evening was to be a paper entitled A Study of the Infectiousness of the Dust in the Adirondack Cottages, by Dr. Irwin H. Hance.

At the next meeting of the Section in Surgery, on Monday evening, the 9th inst., a paper entitled A Report of Two Successful Hip-joint Amputations, the Second of which was Performed by a New Method, will be read by Dr. F. Tilden Brown. Patients will be presented and pathological specimens, new instruments, and apparatus exhibited.

At the next meeting of the Section in Pædiatrics, on Thursday evening, the 12th inst., Dr. Leroy W. Hubbard will read a paper on the Early Symptoms of Joint Disease. Dr. V. P. Gibney will also read a paper. There will be a presentation of patients.

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 16th inst., the following papers will be read: Unilateral Retinal Hæmorrhage, by Dr. David Webster; and The Stacke Operation for the Cure of Chronic Otorrhœa, by Dr. W. H. Bates. Cases will be presented and new instruments exhibited.

Why are Negroes Black?—The *Province médicale* for October 19th contains an abstract of an interesting article on this subject, which was published in the *Médecine moderne*. Buffon, the elder, says the writer, attributed the black skin of the negro to the influence of climate, heat causing the color. Orgeas agreed with Buffon. He had observed the feeble development of the pilo-sebaceous system among negroes, who are less hairy than the whites. Eijkmann enveloped vessels with human skin taken from Malays and whites, and found that the radiation of heat passing through a black skin was not more intense than that which passed through a white skin. In this, says the writer, he agrees with Melloni Desains, Masson, and others, whose researches show that the color of an object or of a tissue has no influence on the obscure heat rays. On his carefully separating the fat from the skin, however, the natural conditions were changed. In the second place, the negro possesses a more developed vascular sudoriparous system than we do. He perspires more freely, and loses heat as an alcaraza does. There is evidently, says the writer, a close relationship between the influence of cutaneous pigmentation and the sudoriparous glands, and the two should be studied together.

The skin of the negro becomes black after birth. Le Cat noted, in 1765, that the newborn negro was of a reddish color, the root of the nails and the scrotum alone being black. Two or three days after birth the skin began to turn black. Darwin also observed that the newborn Australian was of a brownish-yellow color. The Hindoo child at its birth is white, although its parents may be perfectly black.

The adult man's skin varies according to the race to which he belongs. Aside from heat, which has been especially spoken of, we must, says the writer, recognize other causes of equally great importance. Light seems to favor pigmentation of the skin. In uniform heat the light rays seem more active than the dark ones. The sun tans, and women use parasols and gloves to protect themselves from it; darkness, on the contrary, induces pallor. Aristocrats, who do not expose themselves to the air, have a light, transparent skin. The Japanese of distinction rarely expose themselves to the air without being veiled, and their skins are almost as white as those of Europeans. In Siam the high classes also have a light, transparent skin. The drawings of the ancient Egyptians, of the Etruscans, and of the Mexicans represent their women with light skins. A very brilliant light browns the skin even in cold countries. For instance, the Eskimos are brown. The luminous intensity of the long days is such that they are obliged to protect their eyes with glasses.

In India the difference between the color of skins is more marked than among us, and Pariahs black as negroes may be seen side by side with Brahmans white as Europeans. The following type is very generally seen: Tall, straight, and slender; with long heads, a long face, and an aquiline nose. The Brahman is especially distinguished from the Pariah by his haughty bearing. The castes are very numerous, says the writer, and among them may be observed all the coffee-colored tints, the purity of which is not absolute. Among the Brahmans, occasionally, there may be two children in the same family one of which may be white and the other black. The same is seen among the Pariahs, although the white skin is more frequently observed among the former than among the latter. Certain castes which are held in slight estimation, such as the Moukhis, and the Chamars, who live in the shade of the great palm trees, have an extremely white skin.

Humidity favors pigmentation very distinctly. The countries where there are both great heat and great humidity contain the blackest people. The natives of Barbary are very much less deeply colored than the negroes of the Soudan, yet the uniform degree of heat there is 86° instead of 78·4 F., as it is on the coast of Guinea. The Egyptian has remained white notwithstanding a constant mixture with the black Nubians. The people who live in the dry section of the Nubian Desert have a red skin; other races that are brown or that vary from a white to a chamois color also live in a dry country. The Abyssinians, however, in whose country the plateaux are well irrigated, are blacker. The blackest negroes in Africa are those who live in Guinea, where the greatest amount of rain falls.

In Asia, says the writer, it is the same as in India. There is a close relation between the fall of rain and the color of the people. The more moist the climate is, the darker the skin of the natives. As one goes up the Ganges the climate becomes drier and the skin of the natives whiter. The Bengalese are black, but the Sikhs and the Radjpouts are of a dead-white color. In America it is the same. The Brazilians are generally darker than the inhabitants of the Andes. The Portuguese, who come from a rainy country, settled in Brazil, while the Spaniards inhabit the Andes and the dry La Plata section. Spain is very dry as compared with Portugal, and the Portuguese in Europe have the darkest skins of all Europeans.

Heat, light, and humidity, says the writer, are, then, all causes of pigmentation. In dealing with these three causes alone and their relative influence, he says, the question of pigmentation of the skin is a very complicated one. For instance, persons inhabiting a mountainous district, where the climate is cooler, have a lighter skin than those who live on the plains, although it has been seen that the Abyssinians are an exception to the rule. The native of Abyssinia is darker on the plateaux and lighter on the plains. In Peru the inhabitants on the coast have a lighter skin than those on the mountains. D'Orbigny observed that, in America, in the impenetrable forests the savages were lighter; the darkness evidently prevented pigmentation. What, asks the writer, causes the difference between the negro laborer exposed to the sun and the Brazilian savage who lives in the forest? The latter is more or less chocolate-colored, but not black. Are these facts, he asks, sufficient to prove absolutely Buffon's assertion that the color of the skin depends on the climate? Evidently not. If they were we should see the descendants of a white person become black, and *vice versa*. The acclimated white man does not work in the sun, and he preserves his white skin as a Brahman does. Furthermore, it would require many generations to accomplish the change.

The Treatment of Chilblains.—In an abstract from the October number of the *Semaine médicale*, which is published in the *Revue internationale de médecine et de chirurgie pratiques* for November 10th, the writer remarks that, according to Professor C. Boeck, of the Rigshospital in Christiania, resorcin is a very efficacious remedy against chilblains, especially when the drug is associated with ichthyol and tannin in the following manner: Resorcin, ichthyol, and tannin, each, thirty grains; water, a hundred and fifty grains. This mixture must be thoroughly shaken before it is used. The affected parts should be painted with it every night, and, after the first layer is applied, it forms in a few minutes a dry, glazed surface. Under the influence of resorcin the skin becomes shriveled, and the chilblains, as well as the extensive œdematous tumefaction of the fingers and of the hand, disappear rapidly. However, this mixture, in spite of its great efficacy, presents certain inconveniences which may restrict its employment. It stains the skin, and the region to which it is applied will remain black for from one to two weeks after the cessation of the treatment. Sometimes the mixture is not well tolerated by subjects who have a very delicate skin, in which it produces cracks. Finally, it can not be employed in cases of ulcerated chilblains. The following formula, which, says the writer, is less efficacious than the preceding one, may be employed if the patient's work is such that he can not use a substance which blackens his hands: Resorcin, sixty grains; gum arabic, thirty-eight grains; water, a hundred and fifteen grains; talcum powder, fifteen grains. This mixture gives good results. It should be applied every night to the affected parts.

Professor Boeck found that the prolonged use of this external remedy was a good means in the treatment of dryness of the lips and of the continued desquamation of their mucous membrane.

Eudoxine in the Treatment of Gastric Troubles.—The *Revue illustrée de polytechnique médicale* for October 31st contains an abstract of an article from the *Presse médicale belge* for August 11, 1895, in which attention is drawn to a new iodized compound, eudoxine, which is a bismuth compound of nosophene. It is a reddish-brown powder, without odor or taste; it is insoluble in water, and is distinguished from the other bismuth salts by the fact that it is dissolved in the caustic alkalies and presents a violet-blue color.

Eudoxine has very marked healing properties. It has no toxic action at all, and may be given internally in gastric and in intestinal troubles. Even in doses of thirty-four grains a day it provokes no injurious secondary effects. The daily amount for adults is from twelve to eighteen grains, given in three doses.

THE NEW YORK MEDICAL JOURNAL, December 14, 1895.

Original Communications.

THE
TECHNICS OF MAUNSELL'S METHOD OF INTESTINAL ANASTOMOSIS,
WITH A RÉSUMÉ OF THE CASES OF OPERATION TO DATE.*

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Soon after the publication by the writer, in the *New York Medical Journal* of January 20, 1894, of the report of a successful case of intestinal anastomosis effected by Maunsell's method, a letter of congratulation was received from the late Professor H. Widenham Maunsell, who had recently removed from New Zealand to London. He stated that he was dissatisfied with the published description (*American Journal of the Medical Sciences* for March, 1892) of his method of intestinal suture. Last winter, after the publication by the writer in the *New York Medical Journal* of December 1, 1894, of an article entitled Intestinal Anastomosis, read before this association on October 11, 1894, in the course of which a comparison was made between Maunsell's method and that of Murphy, of Chicago, so much interest was shown in regard to the former method, and so many inquiries were made for information as to various details of the technics, and as to where a description of the method could be found, that a letter was addressed to Dr. Maunsell, requesting him to revise and republish his article. Unfortunately, before this letter reached its destination, Professor Maunsell had died from an attack of the *grippe*. A friend, in announcing the unhappy event, said: "Science has lost a devoted and enthusiastic student." The same letter conveyed a request from Mrs. Maunsell that the writer should undertake the revision and publication of the article which he had requested Dr. Maunsell to rewrite. The task the writer now undertakes as a tribute to the genius which conceived and the courage which first executed this admirable surgical procedure, and as an acknowledgment of the debt which he is confident time will prove intestinal surgery owes to this distinguished surgeon.

Technics of Maunsell's Method of Intestinal Anastomosis.—The patient having been prepared in the usual manner for the performance of a laparotomy, and having been anæsthetized, the operation is begun by making a median incision in the abdominal wall below the navel, extending it upward if it prove to be necessary. This opening permits a quick and thorough search to be made for the diseased or injured portion of the bowel. For operations on the appendix vermiformis, the cæcum, or any part of the ascending or descending colon, the rule is to make an incision over the site of disease or injury, if it can be localized. In all doubtful cases the median incision is to be preferred. The abdomen having been opened, and the portion of the intestine to be excised located, it is brought outside of the cavity, accompanied by about six inches of healthy intestine on either side. It is next emptied of its contents above and below the diseased part by passing it between the finger and thumb and gently compressed. The empty gut should be clamped on either side of the diseased portion of the bowel at points six inches distant, to prevent the escape of fæcal matter at the time of excision, or during the subsequent manipulations, either by the clamps devised by Dr. W. S. McLaren, of Litchfield, Conn., or by those improvised as suggested by Maunsell from a safety pin and a sponge, as shown in Fig. 3.

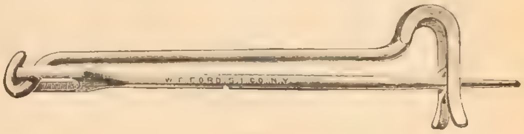

Fig. 1.

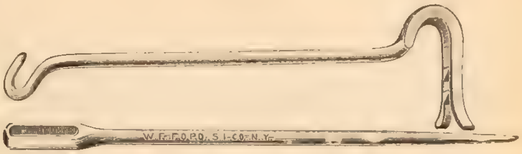

Fig. 2.
McLaren's clamps.

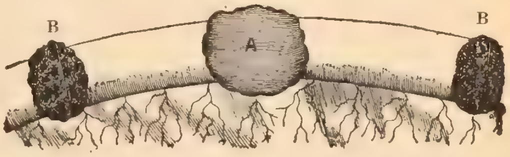

Fig. 3.—A, cancerous, gangrenous, or injured portion of intestine; B B, sponges with safety pins clamping the empty bowel on either side of the diseased or injured structure.

The general peritoneal cavity is shut off by flat sponges which have been rendered sterile and wrung out in hot saline solution, and the exposed portion of the bowel should be protected by the same means. The portion of the intestine to be removed is excised by means of a V-shaped incision having its apex in the mesentery and its lateral borders on either side of the diseased point.

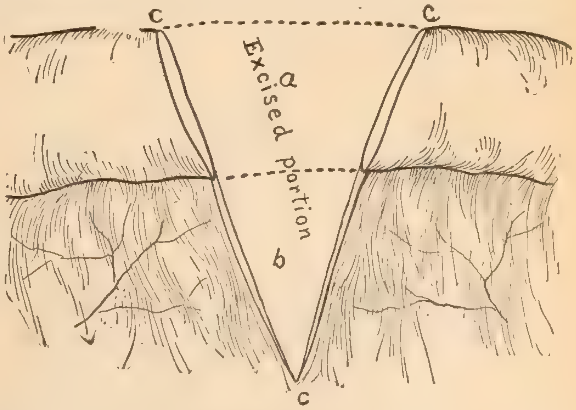

Fig. 4.—*a b*, portion of intestine and mesentery to be removed; *b b*, mesentery; *c c c*, lines of the incision.

The mesenteric vessels are ligated before being cut by passing a needle armed with catgut around them, and tying it, as suggested by Halsted; or they can be picked up and ligated as they are divided. The wound in the mesentery is closed by means of a continuous or interrupted suture, as seen in Fig. 5.

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* Read at the twelfth annual meeting of the New York State Medical Association, October 17, 1895.

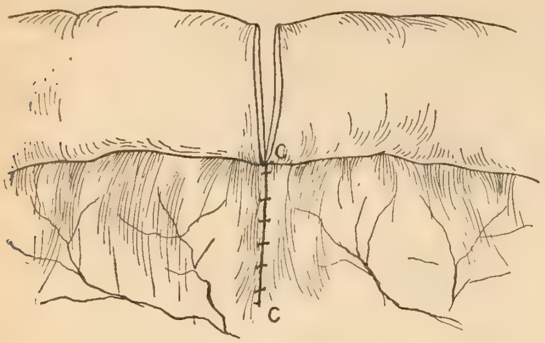


Fig. 5.—*c c*, incision in mesentery united by continuous suture.

After the divided ends of the intestine have been carefully washed with a hot saline solution, followed by a small quantity of a fifteen-volume solution of hydrogen dioxide, the proximal and distal ends are united primarily by means of two temporary sutures which are passed through all the intestinal coats, are tied, and the ends left long.

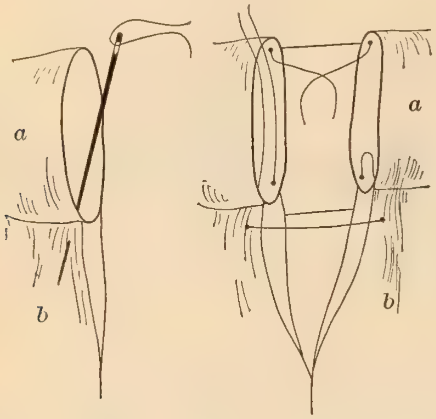


Fig. 6.—*a a*, segments of bowel; *b b*, segments of mesentery.

The first suture is placed at the inferior or mesenteric border, and is passed in such a manner as to include a portion of mesentery on both sides, as is shown in Fig. 6, and the second is placed directly opposite at the highest point of the superior border.

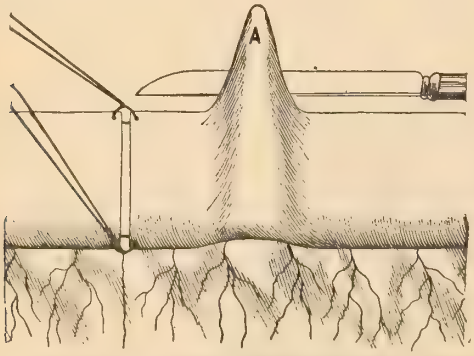


Fig. 7.—A shows the point of longitudinal incision made in the superior border of the larger intestinal segment.

A longitudinal incision, an inch and a half long, is next made in the superior border of the larger intestinal segment, two inches from its severed end, by pinching up the intestinal coats between the finger and thumb, and dividing them with a narrow-bladed knife (shown in Fig. 7).

Through this opening a forceps is passed, and the long ends of the temporary sutures are caught up and drawn back through the opening.

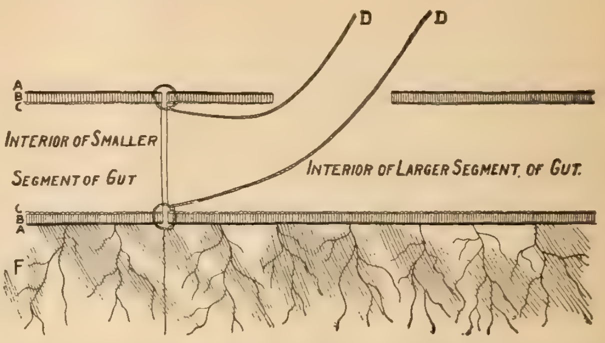

D
D
A
B
C
INTERIOR OF SMALLER SEGMENT OF GUT
INTERIOR OF LARGER SEGMENT OF GUT.
C
B
A
F

Fig. 8.—Longitudinal section of gut, showing A A, peritoneal coat; B B, muscular coat; *c c*, mucous coat; D D, temporary sutures passed into the bowel and out through the longitudinal slit made in the larger intestinal segment; F, mesentery.

By now drawing on these sutures, the ends of both segments of the bowel are invaginated and made to appear through the longitudinal incision as concentric rings. Figs.

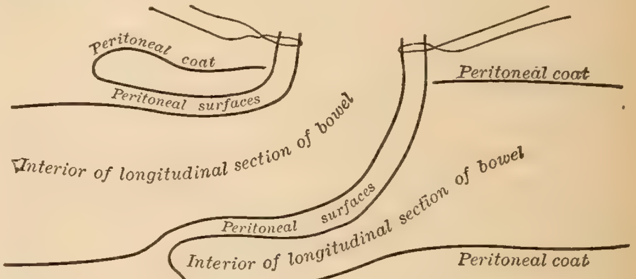


Fig. 9.—Longitudinal section of intestine, showing the relative position of the peritoneal coats of bowel invaginated at the longitudinal opening.

9 and 10 show this to have been accomplished, and the peritoneal surfaces are seen to be in contact on all sides.

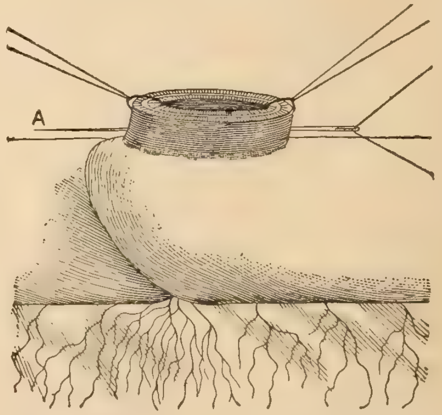


Fig. 10.—A shows the needle passed through both sides of the bowel and through all the intestinal coats, and shows that one passage of the needle places two sutures.

The ends of the long temporary sutures previously alluded to are held by an assistant while a fine, straight needle (milliner's No. 6), armed with a strand of horsehair, is passed through all the coats of the bowel and through both sides about a quarter of an inch from the divided ends. The suture is caught up by forceps, divided in the middle, and tied at once on either side, thus avoiding the confusion that would result if all the sutures were passed before any of them were tied. This process is repeated nine times more, or until twenty sutures are placed and tied. The temporary sutures, having served their purpose, are cut off short. The cut ends of the bowel are dusted over with either iodoform or acetanilide, and the invagination is reduced by means of gentle manipulation accompanied by slight traction. The edges of the longitudinal opening are turned in, and it is closed by Lembert sutures passed through the peritoneal, muscular, and submucous coats.

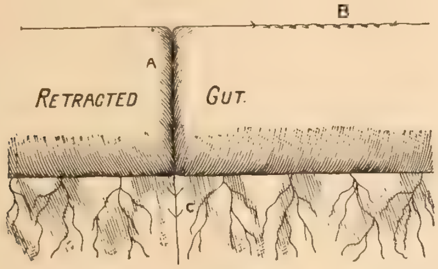


FIG. 11.—This figure shows the intestine after the completion of the anastomosis and the reduction of the invagination. A, line marking the point of union between the ends of the bowel, showing that the peritoneal coat is well turned in, and that the sutures and knots are all inside the gut; B, longitudinal slit in the bowel closed by Lembert sutures.

Anastomosis of segments of ileum and colon may be effected by this method in the following manner:

A temporary suture is passed through all the coats of the greater and lesser intestinal segments at their mesenteric border, care being taken to adapt this border of either segment to the corresponding border of the other. This suture is tied and the ends left long. A second temporary suture is passed through the side of the larger segment at the point where the superior border of the smaller segment touches it, and through which the suture is also passed, tied, and the ends left long. A third suture is passed through all the coats of the highest free end of the larger segment. The location of these sutures and the accurate adaptation of the mesenteric borders of the segments is shown in Fig. 12.

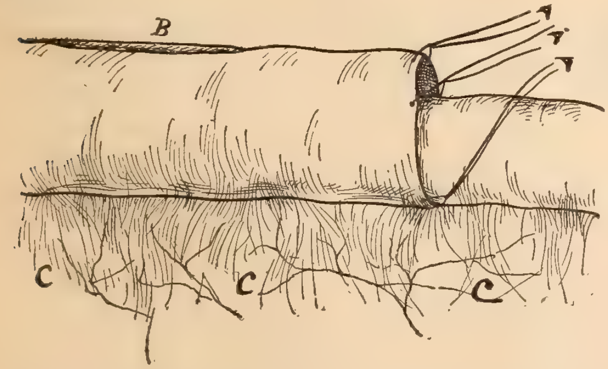


FIG. 12.—A A A, temporary sutures passed through all the coats of both segments; B, longitudinal slit made in the superior border of the larger bowel; C C C, mesentery.

A longitudinal incision is made in the superior border of the larger segment two inches from the divided gut. The ends of the temporary sutures are now drawn through this opening, traction is made, and the free edge of the larger segment is inverted and invaginated, being accompanied by the smaller segment which is only invaginated, and the free edges of the intestine now appear in the longitudinal opening as concentric rings. If the difference of calibre between the two segments is great, a V-shaped portion of the convexity of the larger segment may be removed. This and the method of suturing are shown in Fig. 13.

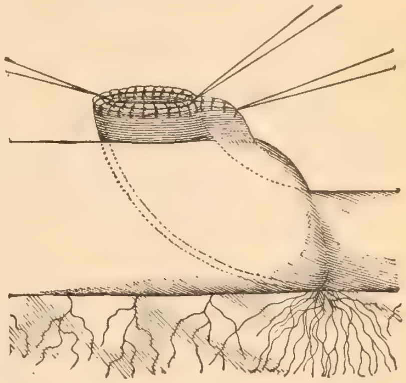


FIG. 13.—Diagram showing the union by invagination in a case where a decided difference in calibre exists between the segments of bowel to be united, and the method of suturing.

The intussusception is reduced and the longitudinal slit is closed, as previously described:

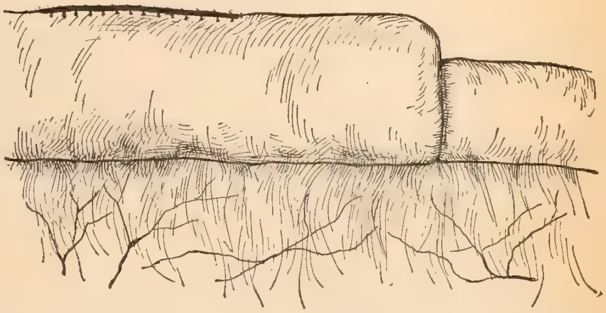


FIG. 14.—Diagram showing the segments after the reduction of the invagination, and the closure of the longitudinal incision in the superior border of the larger segment.

Gastro-duodenostomy or Gastro-enterostomy.—Prior to the performance of operations on the stomach, the patient is deprived of food for two days and the stomach is cleansed by several irrigations with an antiseptic solution during this interval. The patient having been anæsthetized and the abdomen opened by means of either a transverse or a longitudinal incision, Fig. 15 shows how, after pylorectomy, the duodenum may be united to the stomach by means of this method.

Owing, however, to the partial fixation of the duodenum, this method is only applicable to cases in which the growth is confined to the pylorus. When the disease is extensive, it is better to anastomose the jejunum to the stomach at a point on its greater curvature. Gastro-enterostomy is performed as follows:

A portion of the jejunum, as close to the duodenum as possible, is drawn out of the abdominal cavity, emptied of its contents, and clamped. A portion of the greater curvature of the stomach is also drawn into the wound, and the jejunum is brought into contact with and united to it by several Lembert sutures in such a way that there will be as little strain as possible on the usual permanent sutures after they are placed and tied. A longitudinal opening, an inch and a half long, is then made in the superior border of the gut. The corresponding opening in the stomach should be an inch above the greater curvature and parallel to it. The extreme ends of these wounds are now united by temporary sutures passed through all the coats of the stomach and intestine, and the sutures are tied, the ends being left long. An opening is now made near the centre of the stomach sufficiently long to allow of the invagination of the openings already made in both bowel and stomach. This having been accomplished, the openings are sutured in the manner already described, the needle passing through all the coats of the intestine and stomach. The invagination is reduced, and the slit in the centre of the stomach is closed by means of Lembert sutures.

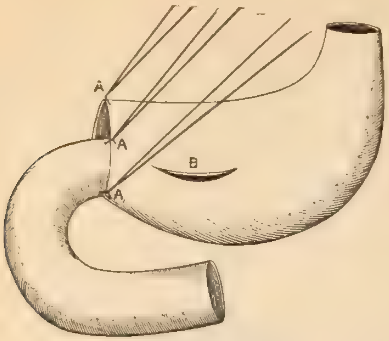


FIG. 15.—A A A, temporary sutures with the ends left long, uniting the cut surfaces of the stomach and duodenum; B, longitudinal opening in the stomach. Through this slit the free ends of the temporary sutures are passed, and by making traction on them the invaginated cut ends of both the duodenum and the stomach are drawn through the opening and the sutures placed from the inner side, as has been previously described.

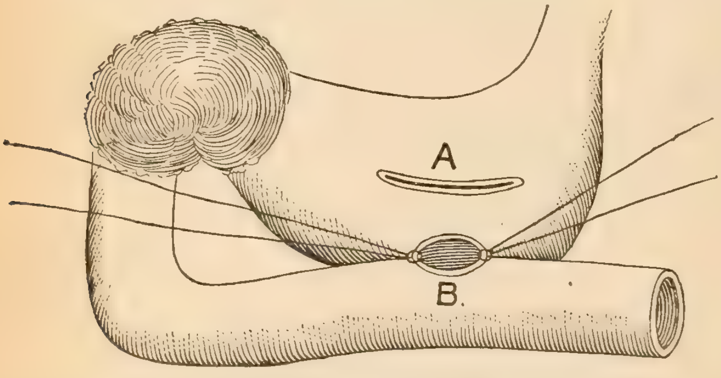


FIG. 16.—A, opening in the centre of the stomach (where the vessels are very small) through which the cut edges of the corresponding openings, B (united by temporary sutures), made in the longitudinal axis of the upper end of the jejunum and in the line of the greater curvature of the stomach, may be invaginated and sutured in the usual manner from the inside.

When the disease is located in the cæcum or in the ileo-cæcal valve, ileo-colotomy may be performed as follows, instead of in the manner previously described:

The diseased cæcum having been completely excised, an opening is made in the side of the healthy colon two inches from its cut end; into this opening the free end of the ileum is inserted. The temporary sutures are applied, tied, and brought out through the cut end of the colon, and, traction being made on them, the cut edge of the colon and free end of the ileum are invaginated and drawn through the free end of the colon. The sutures being applied in the manner previously described, the invagination is reduced. The free end of the colon is turned in to the extent of an inch, and the opening is closed by a row of Lembert sutures, care being taken to pass the needle through a few shreds of the submucous, as well as the peritoneal and muscular, coats, as advised by Halsted.

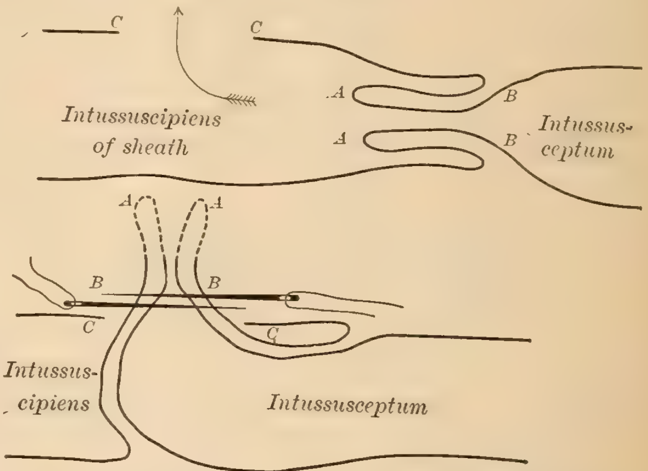


FIG. 17.—Diagram of longitudinal sections of intestine, showing an acute irreducible intussusception and the method of its treatment. C C, longitudinal opening made in the superior border of the intussuscipiens; A A, tip of the intussusceptum; B B, neck of intussusceptum.

When the diseased cæcum can not be excised, owing to the existence of firm and long-standing adhesions formed between this portion of the bowel, the right ureter, and the iliac vessels, ileo-colostomy should be substituted for ileo-colotomy. The diseased cæcum and the ileo-cæcal end of the ileum having been emptied of their contents, clamps are applied four inches on either side of the diseased structure. The ileum is divided. The end of the ileum which is attached to the cæcum is invaginated, and the opening closed by means of Lembert sutures. An incision is made in the convex surface of the colon large enough to receive the free end of the ileum, which is attached to the edges of the cut in the colon by the usual temporary sutures. An opening is now made in the colon two inches higher up, through which opening a forceps is passed and the ends of the temporary sutures are seized, and by their aid the free end of the ileum and the edges of the opening in the colon to which it has been attached are invaginated and drawn out through the upper slit in the colon. The permanent sutures are passed as usual, tied, and cut off short. The invagination is reduced, and the longitudinal opening in the colon closed.

An irreducible intussusception is treated in the manner shown in Fig. 17. A slit is made in the intussuscipiens and gentle traction made on the intussusceptum until its neck appears outside the opening in the intussuscipiens. The base is then transfixed with two fine straight needles armed with horsehair, and the intussusceptum is amputated a quarter of an inch above the needles, leaving a fair stump beyond them. The sutures are now passed through the invaginated bowel, caught up in the interior of the bowel, divided, and tied. The ends of these sutures are left long and used as retractors in place of the regular temporary sutures while the other sutures are being placed and tied. This having been done, they are cut off short, the invagination is reduced, and the longitudinal slit is closed. The object of transfixing the neck of the intussusceptum previous to its amputation is to prevent it from retracting, and it also insures the maintenance of the proper relative positions of the different layers.

The various experimental intestinal anastomoses which in the past few years the writer has performed in accordance with this method on dogs have proved the following points in the technics to be of consequence:

1. The longitudinal slit which is made in the segment of bowel having the greatest calibre (proximal or distal), and through which the invagination occurs, should be located at least two inches from the cut end of the bowel.

2. The mesentery of both segments must be included in the first temporary suture which is passed at this intestinal border; this prevents sloughing of the bowel at this point.

3. The sutures should be placed at least a quarter of an inch from the cut intestinal edge; they should be interrupted, about twenty in number, and should not be drawn too tightly when they are tied.

4. The best suture material for this work is carefully tested and prepared horsehair.

5. The needle best adapted to this work is a round, straight one (milliner's, Nos. 6 to 9).

6. The invagination after the sutures have been placed must be carefully reduced, rather by manipulation than by traction, otherwise the sutures may cut out.

7. In closing the longitudinal slit too much of the intestinal edges should not be turned in or a contraction may result at this point.

The special claim of this method of intestinal suture to recognition and further practical trial rests upon the lack of special appliances needed for its performance; its adaptability to every portion of the intestinal tract; the ease, rapidity, and safety with which an intestinal anastomosis can be effected by its aid; and the fact that no time need be lost in determining the direction in which the invagination should be made.

The objections made to this operation, which experience has proved groundless, are: First, that the sutures pierce the mucous as well as the other intestinal coats. This point Professor Maunsell considered an advantage, for he said "firmly suturing all the coats gives great healing capacity to the ends of the bowel, and the stitches are not likely to tear out." That this objection is not a valid one is proved by the fact that no failure to secure a good result has occurred from this cause in any of the cases of which we have record where an intestinal anastomosis has been performed in accordance with this method, nor has there been the slightest evidence of leakage having taken place. The second and last objection that has been urged has been the possible danger of cicatricial contraction causing stenosis at the point of union. This fear has proved, in the writer's experience, to be without foundation, the patient upon whom the writer operated (performing enterectomy with removal of six inches of the ileum for a perforation following an abdominal contusion) on September 12, 1893, having remained in perfect health and free from bowel symptoms for more than two years. I now have the pleasure of presenting this patient to you. Again, on October 9, 1894, an intestinal anastomosis according to this method was performed by the writer on a dog before the Litchfield County (Conn.) Medical Association. The dog made a good recovery and remained in good health till April 23, 1895, when he was killed and a necropsy performed before the same association. The intestinal scar at the point of union was barely visible, there was no ocular evidence of contraction, and there were no intestinal adhesions.

It has from time to time been suggested that after the sutures have been placed according to this method and the invagination has been reduced, it would be wise to place as an additional safeguard a row of Lembert sutures around the outer side of the bowel, uniting again the peritoneal coats of the segments. To this suggestion Professor Maunsell replied in a letter to the writer, dated London, February 25, 1894, as follows: "A double line of sutures should never be applied in intestinal surgery. It obstructs the circulation too much, interfering with firm plastic peritonitis, and in some cases causing gangrene of the inverted portion of the gut."

The writer has been able to collect the reports of eleven cases of intestinal anastomosis effected by this method of suture. Of these operations nine resulted in the recovery of the patient and two were followed by death, which could not in either instance be fairly attributed to the failure of the suture or the method of applying it.

The successful operations were performed by the following surgeons:

1. Frank Hartley, M. D., surgeon to the New York Hospital. Operation performed during March, 1892, and recorded in the *New York Medical Journal*, vol. lvi, pp. 302 and 464.

2. Mr. Stanley Boyd, F. R. C. S., surgeon to the Charing Cross Hospital, London. Operation performed November 26, 1892. Case recorded in the *Transactions of the Medico-Chirurgical Society*, London, vol. lxxvi, p. 345.

3. Frederick Holme Wiggin, M. D., surgeon to the New York City Hospital (Blackwell's Island). Operation performed September 12, 1893. Case recorded in the *New York Medical Journal*, January 20, 1894.

4. Mr. W. Harrison Cripps, F. R. C. S., surgeon to St. Bartholomew's Hospital, London. The case was reported and the patient shown to the London Medical Society at its meeting, November 12, 1894.

5. Mr. Keetley, F. R. C. S., surgeon to the West London Hospital. Case recorded in the *Lancet* for November 17, 1894, p. 1156.

6. Mr. L. A. Bidwell, F. R. C. S., surgeon to the West

London Hospital. Case reported to the writer by Professor Maunsell in February, 1895, and to the London Medical Society by Mr. Bidwell, March 25, 1895.

This gentleman has recently informed the writer that the operation was performed upon a woman, twenty-seven years of age, for a rupture of the ileum which occurred in the course of an operation for the removal of an extra-uterine gestation sac of ten months' standing. In reply to the writer's question as to whether or not extra sutures had been employed to approximate the peritoneal coats after the reduction of the invagination, Mr. Bidwell writes: "The only modification which I employed was closing the longitudinal opening in the gut with Halsted's suture instead of Lembert's."

7. Dr. Emmerich Ullman, of Vienna. The operation was performed in December, 1894, only one row of silk sutures being employed. The patient made a good recovery. The case was recorded in the *Centralblatt für Chirurgie*, No. 2, 1895; also in the *Annals of Surgery* for August, 1895.

8. Mr. W. Watson Cheyne, F. R. C. S., surgeon to the Kings College Hospital, London. Case unrecorded. The operation was performed on April 9, 1895. The following history of the case has been kindly furnished to the writer by Mr. Cheyne: "Cancer of transverse colon; excision, Maunsell's method, and recovery. Female, married, aged seventy-two, admitted to King's College Hospital, March 27, 1895. Previous history unimportant. In July, 1893, had an operation performed for pain in the abdomen; nature of the operation not known; she says it was about the vagina. Previous to that she had suffered much pain in the right iliac fossa for about eighteen months. She says she was cured as the result of this operation, but of late pain has come back in the right iliac region and symptoms of partial obstruction have set in more than once. When she was admitted there was a condition of partial obstruction, but this improved somewhat before she was operated on. On her admission her abdomen was a good deal distended; nothing was felt *per rectum; per vaginam* the anterior wall of the vagina seemed scarred. On placing the hand on the right side of the abdomen the coils of the intestine are readily felt and great pain is at once felt as the result of the peristalsis set up under chloroform. A hard oval tumor is felt about the umbilicus, which moves freely in the interior of abdomen. On April 9th the abdomen was opened and a cancerous tumor of the transverse colon was found, together with enlarged glands in the mesocolon and in the neighboring omentum. The bowels were clamped by Maunsell's safety-pin method and the disease was removed. Repair by Maunsell's method. Uninterrupted recovery. Patient well when I last heard." To this Mr. Cheyne adds: "I found Maunsell's method very difficult in this case. The obstruction had evidently lasted a long time, and the longitudinal muscular bands of the intestine above were enormously hypertrophied and formed rigid bands, and the difficulty of invaginating that end of the gut was extremely great. In a case of old-standing obstruction I would not again use Maunsell's method."

9. Dr. Robert T. Morris, professor of clinical surgery in the New York Post-graduate Medical School and Hospital. The operation was performed in the writer's presence on September 19, 1895. On October 11, 1895, Dr. Morris reported the patient's convalescence to have been uneventful.

Unsuccessful Cases.—1. Professor H. Widenham Maunsell. The operation was performed during December, 1886, and was recorded in the *Lancet* of February 13, 1892. It was the first operation in which this method was employed, and was for the relief of intestinal obstruction due to a carcinoma. The patient died on the sixth day, from exhaustion. The necropsy revealed perfect union of the segments of the bowel. There was no sign of leakage.

2. Dr. Parker Syms, surgeon to the Lebanon Hospital, and assistant surgeon to the New York Cancer Hospital. The operation was performed on September 19, 1893. The patient died of septicæmia on September 22d. In explanation of the cause of this patient's death, it should be stated that on September 5, 1893, Dr. Outerbridge, gynæcologist to the hospital, performed abdominal section for the purpose of removing a malignant growth which was low down in the pelvis, involving the entire circumference of the sigmoid flexure. The tumor was so adherent to the surrounding structures that it could not be removed. Therefore, the abdominal wound was closed; one layer of silkworm-gut sutures passed through all the layers. On September 15th an attempt was made to reach the tumor by means of Kraske's method of rectal excision, but after the posterior three quarters of the rectum had been freed from its attachments the operation was abandoned. On September 19th, Dr. Syms opened the abdominal cavity in the line of the cicatrix, which was found to be very firm. The abdominal walls could not be pulled apart, and the tissues had to be incised. The diseased portion of gut was with difficulty drawn into the wound, and three inches resected. The hæmorrhage was profuse, and controlled with difficulty on account of the friability of the tissues. The ends of the gut were invaginated, and the sutures placed and tied according to Maunsell's method. The latter procedure was difficult of accomplishment as the sutures tore out easily. The patient's condition was poor, and the abdominal cavity was filled with salt solution. Prior to the performance of this last operation the patient's temperature was 101° F. Following the operation, the temperature rose to 103·6° F. The sacral wound, Dr. Syms stated, had already shown signs of septic infection, and later it became gangrenous. The patient died on September 22, 1893. No record could be found of the results of the necropsy if one was made. Surely there was sufficient cause for the patient's death, aside from the possible failure of the intestinal anastomosis. Throwing out this doubtful case, we find that the method of intestinal suture devised by the late Professor Maunsell has in all the cases which the writer has been able to collect resulted in a satisfactory union of the intestinal segments.

The writer, in concluding this article, wishes to acknowledge his indebtedness to Mrs. Maunsell for Figs. 12 and 14 and some notes found among her husband's papers after his demise; to Mr. Boyd for Fig. 6; to Mr. Cheyne, Mr. Bidwell, Dr. Morris, and Dr. Syms for the notes of their case; and to the Messrs. Lea Brothers & Co. for electrotypes of several of the illustrations.

55 West Thirty-sixth Street.

A TRUE PAPILLOMA OR PAPILLARY FIBROMA OF THE NASAL SÆPTUM.[*]

By JONATHAN WRIGHT, M. D.

At the risk of wearying you, I again bring to your notice a nasal neoplasm in whose histology I have been interested. After many years of expectant observation I have met with a case of nasal papilloma in the sense of Virchow and of the majority of pathological histologists.

In a paper [†] read before this society several years ago I called attention to the confusion of nomenclature introduced by Hopman in calling papillary hypertrophies and papillary fibromata by the one name of papilloma. Differing as they do totally in pathogenesis, structure, frequency, and usual situation, and having only in common occasionally a similar appearance to the naked eye, there is surely no excuse for the term which has unfortunately been adopted by the majority of authors of recent works in rhinology and by at least one histologist (Birch-Hirschfeld, edition of 1887).

Without making any special search in literature I call to mind only one case of undoubted nasal papilloma reported since my paper was read four years ago.

I allude to the case reported by De Santi in the *Lancet*, December 8, 1894, occurring on the sæptum in a man of eighty-two, with rodent ulcer of the nose externally.

The history in my own case is as follows:

Mrs. S. G., aged twenty-eight years, a Roumanian, came to the out-patient department of the Woman's Medical College last autumn (1894).

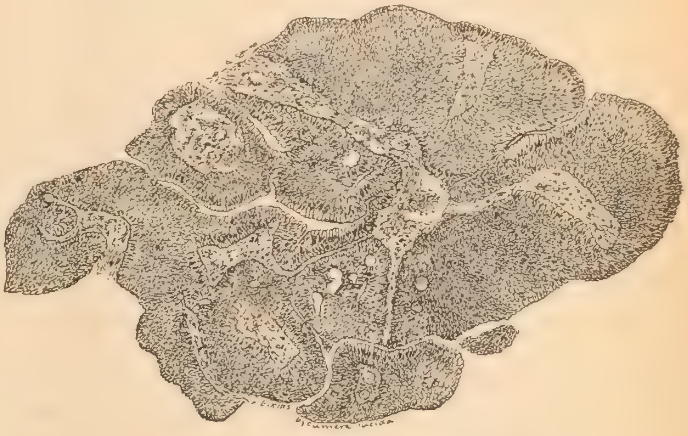
Her family history was negative. She was a healthy woman with the exception of some ovarian trouble. When a child she had had frequent epistaxes, but was not sure from which nostril. For seven years she had felt a valvelike obstruction in the left nostril on forced inspiration, but had remarked no increase in that time. For two months she had been on antisyphilitic treatment with no effect on any of her symptoms.

On examination, the left nostril seemed to be completely stopped anteriorly by a very vascular, soft, papillary, pedunculated mass, freely movable. It was completely removed by the cold snare with only moderate hæmorrhage. It was irregularly globular in shape, flattened by the pressure of the ala as it lay in the nose. It was about one centimetre in each of its two longest diameters. Its pedicle was slender and attached to the upper part of the cartilaginous sæptum at a spot about two centimetres from the columna.

After its removal, inspection showed that this spot coincided with a region which was subjected to the attrition of the upper edge of the triangular cartilage, which forms the ridge known as the plica vestibuli (Zuckerkandl), and which in this case rubbed against the sæptum when the lower edge of the triangular cartilage was rolled out by muscular action in the dilatation of the alæ nasi during inspiration. The base of the growth was cauterized and as yet there has been no recurrence.

Microscopic examination shows that the pedicle is very slender, and is made up of fibrous tissue which sends off numerous branches covered by columnar epithelium. This columnar epithelium is unchanged in those places where it was protected from the external irritation of air and dust, and the rubbing of surfaces, as in the crypts between the papillæ; but where it was exposed to these influences, as at the ends of the papillæ, the tendency for the cells to become atypical and approximate the type of squamous cells may be noticed in the superficial layers. Everywhere the marked feature of the growth is the proliferation of the epithelium. The stroma is scanty, but carries a large number of lowly organized blood-vessels. In places these are so abundant that the tissue is honeycombed with them. This characterizes nearly all growths of the mucous membrane of the sæptum behind the vestibule.

There is some serous infiltration of the stroma and there is a moderate number of round cells.



Fibroma papillare (true papilloma) of the nasal sæptum.

There are places where the epithelium forms digitations into the stroma, but this is less marked than usual in papillomata of the squamous-celled variety, and where these digitations or scallops occur there is an approach to the squamous type. In places the columnar cells are still provided with cilia. Even with a one-twelfth homogeneous immersion objective it is impossible to make out any stickle cells among the squamous epithelium. Elsewhere,[*] however, I have shown that these occur in some of the other nasal growths. Their presence simply means that the metamorphosis has advanced to completion.

It will be remembered that this tumor had its origin not far from the normal squamous epithelium of the vestibule, and I am somewhat surprised that the epithelial cells are so decidedly columnar in type as they are. Now, a structure such as this is a rarity in nasal pathology. This is almost the only growth I have observed which had any appearance of a true papilloma out of ten or twelve thousand nose and throat cases seen in the last nine years (I do not include hard warts of the sæptum near the columna). It is the only one which a microscopic examination has subsequently proved to be a fibroma papillare. I have seen scores of "Hopman's papillomata," and examined microscopically perhaps a dozen. Last year I showed you a section of one and a drawing of the section of another.

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[*] Read before the American Laryngological Association at its seventeenth annual congress.

[†] Nasal Papillomata. *New York Medical Journal*, December 26, 1891.

[*] Some Remarks on the Structure of Œdematous Nasal Polypi. *New York Medical Journal*, November 4, 1893.

In this drawing you will see fairly well the general character of the tumor I have just described, and it is unnecessary for me to repeat the many points of distinction from the inflammatory products mentioned above, upon which I have dwelt in former papers.

Since this paper was written, I have examined histologically a similar tumor from the sæptum of a five-year-old child, sent to me by Dr. Arrowsmith.

DEVIATION OF THE CARTILAGINOUS NASAL SÆPTUM:

ITS CURE.[*]

By EMIL MAYER, M. D.,

SURGEON TO THE NEW YORK EYE AND EAR INFIRMARY;
LARYNGOLOGIST TO THE RED CROSS INSTITUTE;
LECTURER ON LARYNGOLOGY TO THE NEW YORK POLYCLINIC;
FELLOW OF THE NEW YORK ACADEMY OF MEDICINE, ETC.

DEVIATION of the cartilaginous sæptum, either congenital or due to violence, presents itself with a great degree of frequency, as the many and varied forms of treatment for its relief would indicate. It occurs nearly as frequently in the female as in the male, and is usually of many years' standing before steps are taken for its relief. The principal symptoms are those resulting from stenosis, and may be greater or less in various individuals. These may be headache, radiating pains, mouth breathing with its consequent discomfort, and malaise on rising, and, as I have seen in one case, asthma with maniacal attacks which, on the cure of the stenosis, promptly subsided, and lastly, the deformity occasioned by the deviation.

Its diagnosis is readily made; it may be distinguished from an enchondrosis by the presence of a cavity on the opposite side. The treatment that I have followed and carefully watched for the past twelve years is that which has become known as the Asch operation.

The vast majority of the patients operated on by its originator were under my care from the time it was first performed. Fully as many cases occurred in which both operation and after-treatment were solely in my hands. The first patient reported operated upon by this method was one of my patients. This operation occurred in September, 1883, and in four others of the six cases then reported the patients were under my care as Dr. Asch's assistant. This report was made at the twelfth annual congress of the American Laryngological Association, and was entitled A New Operation for Deviation of the Cartilaginous Sæptum.[†] My opportunities have therefore been unusual, and abundant occasion has been given me to judge its merits.

Various improvements have been made in the after-treatment of these cases since the original report was made, to which attention has been called from time to time, but the technics of the operation remains the same. In each instance the operation has been successful, not only in the hands of Dr. Asch and myself, but also in those of Dr. Adams, Dr. Roberts, Dr. Colton, Dr. Butts, and many others.

In order that the operation and the after-treatment may be elucidated, I here report the history of a single case:

Miss X., aged sixteen, was referred to me by Dr. A. M. Lesser. She was a confirmed mouth breather, and had copious secretion from the nasopharynx and from her right nostril. The left side of the nose was entirely occluded by a deviation of the cartilaginous sæptum half an inch from the external opening. Adenoid vegetations in large number were present.

On June 20, 1895, the patient was operated on at the Red Cross Institute, under ether anæsthesia, and with the assistance of Dr. Lesser and Dr. Steger. The adenoids were removed first. The hæmorrhage having ceased, the anterior naris was sprayed with a cold solution of boro-lyptol. The curved gouge was first introduced to break up any adhesions existing between the sæptum and the turbinated body, and also to ascertain the presence of any posterior obstruction.

The cartilage scissors were now introduced, the blunt edge over the convex surface and over the point of the greatest convexity, and the incision was then made; the scissors being then withdrawn and again inserted in the same manner, this time at right angles to the first position, or as near to that angle as possible, a second incision was made.

The finger was now introduced into the nose on the convex side, pushing the segments into the concavity, care being taken to break them effectively. The long-bladed nasal compressing forceps was now well introduced and firm compression was made. This arrested hæmorrhage and straightened the sæptum, and the spray was again used. The hæmorrhage was comparatively slight. All clots having been removed, a hollow and perforated vulcanite splint was introduced on the left side, one being selected that would fit snugly in the nose and remain concealed. A smaller tube was inserted on the concave side and served to prevent the formation of a clot, thus adding to comfort in breathing and, by making equable pressure, preventing subsequent hæmorrhage. This completed the operation. All the instruments used, including the tubes, were carefully sterilized beforehand.

A spray of cold Dobell's solution was directed to be used every half hour in both nostrils.

June 21st.—No reaction; has passed a comfortable night. Tube on the concave side removed; breathes freely through both sides.

22d.—Tube removed, nose sprayed and cleansed, and tube replaced. No rise of temperature; still in bed.

23d.—Tube removed and reinserted as before. Sitting up.

24th.—Went home wearing the tube, no part of which protruded, only a slight bulging indicating its presence.

27th.—Tube has been taken out daily at my office, the nose sprayed and cleansed, and again inserted.

Patient now removes the tube daily and cleanses it, and reinserts it after cleansing the nose with the spray.

August 4th.—Patient has called every fourth day at my office. A few granulations on the concave side were present and were removed by the cold wire snare.

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[*] Read before the Laryngological Section of the New York Academy of Medicine, October 23, 1894.

[†] *New York Medical Journal*, December 20, 1890.

The tube has been worn continuously for five weeks, and at night only for another week.

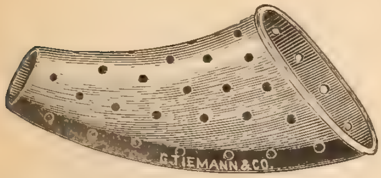
September 15th.—The deviation no longer exists, the sæptum being entirely straight; a free current of air is established; the voice, which was disagreeably nasal before, is now clear and distinct, mouth breathing is a thing of the past, and the patient is discharged as cured.

The changes that have been made since the first report of this operation have been mainly in the means used as a support after the crucial incision and straightening.

A piece of tin wrapped in absorbent cotton impregnated with a 1-to-5,000 solution of mercuric bichloride and held *in situ* by means of plugs of iodoform gauze was the means of support then used. The vulcanite tube has supplanted this, and has the following advantages: It gives firm, equable pressure, is aseptic and painless, and is readily removed and reinserted by the youngest of patients. The beneficial effects of the operation are felt at once and all the time, by its enabling a free current of air to pass.

With the use of the rounded Asch tube I have found that the pressure was not so well dispersed over the sæptum as I should like.

Messrs. Stohlmann, Pfarre, & Co. have made for me some tubes which are flatter and more oval, and which press well upon the sæptum. They are made in sets of six, and are numbered from one up, the largest being numbered one. Their use has been very gratifying.



I may add that the insertion of the tube requires no force and should not occasion any pain.

The early operations were followed by frequent introductions of the straightening forceps which were painful to a great degree. The steady pressure of the vulcanite tube renders this procedure unnecessary. The incision may be made with a knife, but, having tried both, I prefer the scissors.

The objection recorded against this operation * is "that the sæptum can not always be brought to a perfectly vertical plane, and, unless it is, the greater air pressure on the concave side, together with the natural resiliency of the cartilage, not infrequently forces the sæptum farther toward the narrow naris. This is particularly apt to be the case during the period of the greatest constructive activity, a period in which operations on the sæptum are most commonly demanded."

This, if true, would be a serious and valid objection, and recurrences would be the rule. It is fallacious, however, because this operation destroys forever the natural resiliency of the parts, so that even when a perfectly perpendicular plane has not been attained free breathing space always exists.

Thus I have watched cases extending over a course of years, and in the case mentioned as being the first one reported operated in twelve years ago no obstruction to the free current of air has occurred. I have seen numbers of cases after three, four, five, or more years had elapsed after this operation had been performed, and in each instance the cure had been a permanent one.

As illustrating further the statement that the natural resiliency of the parts becomes forever destroyed, I here append the notes of a case in which, some time after operation, the nose was subjected to very severe violence and yet no recurrence resulted:

William A., aged twenty-eight years, wire worker. Sæptum deviated to the left from violence. Operated on in April, 1893, by myself. Discharged cured at the expiration of six weeks; sæptum nearly straight, no perforations, and a free current of air established. On August 15, 1895, two years after, he became engaged in an altercation, the result of which was that he presented a frightful appearance a few days later. He had been terribly punished; his face was a mass of bruises, ecchymosed; his nose was swollen to an enormous extent, and he had bled very profusely from that organ. An examination, made on October 22d, showed no further deviation of his sæptum, and with the subsidence of the tumefaction his breathing was as free as ever, and his sæptum had not suffered any damage. He is present for examination.

To illustrate in a practical way the results of this operation, I present this evening for your examination a patient who was operated upon on April 24, 1895.

His deflection was due to violence (a fall of ten feet) three years before. He is sixteen years old. Dr. Asch operated, with my assistance, in the presence of Dr. W. K. Simpson, Dr. Z. L. Leonard, and Dr. Hulin and Dr. Prefontaine of the house staff of the New York Eye and Ear Infirmary.

Deviation to the left; nose entirely occluded on that side. At the end of six weeks he was discharged as cured. An examination will show the result to be perfect freedom of breathing through the affected side and a straight sæptum.

In order to show the permanent results, I here present a second case to you for examination:

This young lady came to me for treatment at the age of seventeen, complaining of stenosis of the left side and of the deformity. The obstruction was complete, the deviation extending entirely to the turbinated on the left side, to which it was attached. I operated on September 16, 1891, and in six weeks' time she was discharged cured.

A recent examination, four years after, shows a perfectly normal sæptum and no deformity.

A more recent case shows a patient wearing an oval tube, and this boy of ten can readily remove and reinsert his tube. The operation was performed three weeks ago.

These cases will, I am sure, suffice to indicate what is true in every case as to the complete recovery, and which I trust I have fully substantiated.

In the past three years this operation has been performed at the New York Eye and Ear Infirmary and in my own practice twenty times. Each case was successful. The patients' ages ran from nine to forty years. There were sixteen males and four females. In seventeen cases the deviation was to the left. In no instance were there any unpleasant after-effects. The operation having been uniformly successful in chronic cases, I determined to try a modification of it in an acute case which was referred to me by Dr. C. E. Clark on July 18, 1895:

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* *New York Medical Journal*, December 1, 1894.

Mr. H., aged twenty, clerk, presented himself with the following history: On July 1, 1895, while riding a bicycle at full speed and meeting an obstruction, he was thrown forward, falling on his face. His nose was much swollen and had bled profusely. After most of the swelling had subsided his nose was flattened and painful and stenosis was almost complete.

An examination showed fracture of the left nasal bone with depression and a deviation of the sæptum to the right. The deformity was very great. With the nasal forceps I compressed the sæptum, straightening it and raising the depressed nasal bone. I then inserted a conical nasal tube on the withdrawal of the forceps. This tube was perforated and of vulcanite, and was shaped like a truncated cone. The tube came out the next day and was again replaced after straightening. It then remained *in situ* for three days, when I removed it, cleansed it, and reinserted it.

After the first day there was no pain or discomfort in wearing the tube, and he breathed freely through both sides. The tube was now left *in situ* for a week and then removed; after cleansing it was reinserted. After this the patient removed the tube daily.

On August 26th, after he had worn the tube for five weeks, it was discarded altogether. He has now no difficulty in breathing and there is little deformity. Re-examined, October 21st. Sæptum nearly straight, free current of air established. Some bony irregularity felt on the left nasal bone where the fracture was. There is an entire absence of deformity. Patient appears here for examination.

In this case lasting deformity and deviation would surely have occurred but for the vulcanite tube, which is a true splint, the use of which is infinitely preferable to the older method of gauze packing.

I may add that the perforations in the tube make its retention an easy matter.

In conclusion, as a result of my experience, it can be confidently stated that the Asch operation:

1. Establishes permanent freedom of breathing through the affected side.
2. Results in a straightened sæptum.
3. Reduces the deformity to a minimum.
4. Is of the least discomfort to the patient.

25 East Seventy-seventh Street, New York.

CONGENITAL OSSEOUS STENOSIS OF THE NARIS.*

By A. B. THRASHER, M. A., M. D.,

CINCINNATI.

Baby C., aged eighteen months, was brought to me for impaired nasal respiration in April, 1895. He was a well-nourished, handsome boy, but inclined to mouth breathing. There was a muco-purulent discharge from the right naris anteriorly. Digital examination of the vault of the pharynx revealed a mass of adenoids, to which I immediately attributed the nasal trouble. Under chloroform narcosis I removed the adenoids, when with the index finger of my left hand in the nasopharynx I passed a curette through the right naris and ran against an obstruction just before I reached the finger in the nasopharynx.

I could find no opening large enough to pass my small nasal curette. Firm pressure with the curette broke down the partition, which was of thin bone, somewhat thicker near the sæptum and thinning out to apparently the thickness of an eggshell at the outer wall. This osseous web was seemingly united to the lateral wall at the posterior extremity of the lower turbinate, but was not attached to the turbinate, as could readily be detected by the finger in the nasopharynx. I supposed I had to deal with a congenital osseous synechia, as from the history it had existed since birth.

DEGENERATIVE HEREDITY;

OR, SOME DEGENERATIVE INFLUENCES OF MODERN CIVILIZATION UPON HEALTH.*

By CHARLES DENISON, A. M., M. D.,

DENVER, COL.

First Proposition.—*The advance in the healing art, in so far as the saving and prolongation of life are concerned, suspends the law of natural selection and permits the weak to propagate their kind.*

The facts of heredity need no demonstration in this enlightened day and generation; they are the commonplace of knowledge. Grant Allen gives the Weissmann theory when he declares that "what man is, he is already potentially at birth; whatever little can be added by himself is at best but an infinitesimal fraction compared with what he derived directly from his parents or indirectly from his earlier ancestry." The peculiarities of offspring and their similarities to their progenitors are expected to appear not only in kind but at the times or ages when preexistent in the parent. So much is this the case with all characteristics that Darwin proclaimed their inheritance as the rule and their non-inheritance as the anomaly. The facts are undisputed, but the peculiarities and vagaries of inheritance remain unexplained, notwithstanding the intense interest the subject of heredity has always excited in all enlightened communities. Science has not yet satisfactorily elucidated the reason why a generation is skipped in the manifestation of certain characteristics in one instance and the inheritance is direct from the father or mother in another; or why characteristics inherited seem to cross from father to daughter, or mother to son, or come from one parent to both sons and daughters.

De Candolles's researches show that distinctive traits are oftener transmitted from the father than from the mother, especially those pertaining to the higher faculties, while some investigations of my own over twenty years ago, based upon the opinions of many medical men, strongly indicated that physical states (tendencies to disease) were oftener contributed by the mother than by the father.

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* Read before the American Laryngological Association at its seventeenth annual congress.

* Read before the American Public Health Association, October 3, 1895.

But the awful responsibility of heredity, when considered as perpetuating and even doubling diseased tendencies in the offspring, is the particular phase of this subject which now demands our attention. The question is of far greater importance than the prevalent apathy and the blind fatalism and sentimentality extant as to the passion of love would seem to indicate. If there is anything in the old adage, "Love goes where it is sent," then it is indeed possible that a sensible enlightenment of marriageable young persons as to the dangers of disease inheritance might do much good, and the anxieties and fearful disappointments of tainted alliances be thus avoided.

It is with no disrespect for religious beliefs or the dictum of the pulpit, or with any special antagonism to authors of fiction, who deal in sentiment and expound social customs, that I, a physician, seek to have this question considered from the scientific standpoint of evidence, the results of the observations of natural laws. Admit, if you must, that sentiment and theory are subverted and ignored by the cold facts required in a physician's logic, there is at least a good basis of truth in his conclusions, and it is to these truths, with regard to the heredity of disease, especially the tendency to or aptitude for tuberculosis, to which your thought is invited.

The inherited diseases are considered to be goître, leprosy, gout, scrofula, tuberculosis, cancer, syphilis, rheumatism, eczema, and the neuroses, such as epilepsy, insanity, chorea, hysteria, and asthma.*

The taints of gout, leprosy, and cancer are more general than their actual manifestations indicate, because, coming as they do in old age, the predispositions thereto may not have had a chance to show themselves in those dying of acute diseases. The neuroses seem to be correlated—*i. e.*, the inheritance may or may not be of the same kind in the offspring. So also, it seems to me, are cancer, scrofula, tuberculosis, and malarial disease, at least in the actual manifestations of these diseases. Malarial disease seems to have a very intimate relation to tuberculosis; cancer, according to my records, certainly predisposes to tuberculosis in the next generation; and as for scrofula, the diagnostic powers of tuberculin show this glandular condition to be tubercular oftener than was ever suspected before Koch discovered that agent.

The power to resist disease is an inherited gift which ought to be recognized more than it is, and the same can be said of the unusual susceptibility in some families to certain contagious diseases, so marked in the mortality records of scarlet fever, diphtheria, whooping-cough, and measles. The composite biology of the offspring is unable to resist or actually intensifies the morbific influences of these dread infantile diseases, and an infant mortality results which greatly modifies any rule for determining the excellence or failure of family strains. This peculiar characteristic I shall presently make use of in a rule I will attempt to formulate, because I believe that an individual's susceptibility to or natural opposition to disease is almost always an inherited proclivity, and that, too, in no small degree. While all our human evidence, and I can here present only a small part of it, points in the same general direction, I will first ask you to go aside with me to briefly examine the striking proofs furnished in the high breeding and inbreeding of animals.

Nature's law is always in favor of harmonious development; this is the acme of success. The human race can learn much from this, the only kind of success Nature will stamp as permanent in the breeding of animals. It is really inharmonious development that the breeders of cattle are now getting by the fatal degeneration which they are introducing into their high-bred families. It makes no difference whether it is for increasing the quality and quantity of milk given, as in the extreme types of the Jersey or the Holstein, or for the weight and fattening proclivities, as in the Shorthorn or Galloway; it is the breaking of a natural law by the constant doubling of like strains which leads to degeneration. This high breeding becomes practically the same as inbreeding, a similarity which, by the way, could be pointed out as well in the human family if time permitted.

Dr. Greswell, the very capable State veterinarian of Colorado, says that intense breeding in any direction in animals produces not only this degeneration, but eventually sterility as well. His has been no common experience in this line, and convinces one that high breeding is not only synonymous with inbreeding, but the latter is synonymous with scrofula, and this in turn is synonymous with and surely leads to tuberculosis, which finally is the doom of every high-bred herd. Dr. Greswell makes the statement advisedly, that if the tuberculin test were allowed to decide (and he esteems this test superior to all others), "not a noted family of (1) Jerseys, (2) Shorthorns, (3) Devons, (4) Holsteins, (5) Herefords, (6) Guernseys, or (7) Galloways could remain." He speaks of them not as individuals, but as families of the highest grades, the majority of which would be condemned. He further states that in the United States even twenty-eight per cent. of full-blood Jerseys would succumb to this test, while in England the ratio would be thirty-five or more out of every hundred. Is it, then, so very strange that the influential owners of these overbred strains in England, and to a certain extent their associate boomers in this country, make common war against such a splendid test and will not allow it to be used in their herds? The pecuniary loss would be enormous if the truth were to be known! This is a serious question which we have not time here to consider, if, indeed, it is true that the queen milkers of the world, the Jerseys, are thus contaminated with tuberculosis. That this is the direct result of high breeding and inbreeding is likewise shown by the experience with the Shorthorn family for beef purposes. Crowded feeding and intense inbreeding here give a great activity to the conversion of food into blood; the red corpuscles do not have time to form and the white corpuscles are found to be much increased in size and number. A weakened blood state is thereby created which is most favorable to the invasion of scrofula and tuberculosis. This process is pushed sometimes to the point that the overcrowded blood-vessels rupture in the brain and death puts a stop to the scheme.*

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* Organic heart disease, diabetes, emphysema, hæmophilia, lithiasis, and color blindness are thought to hold a secondary position as to the probability of inheritance.

Such fruitful soil for tuberculosis created in dumb beasts finds its analogue, as we shall presently see, in the highest ranks of the human family, where it would seem there ought to be good sense enough to prevent it. To be sure, the law declares that the sins of the fathers are visited upon the children to the third and fourth generation. Yet because there is a specific cause—the germ of tuberculosis—not a few people discredit the general belief, previously held, of the hereditability to this disease which probably has to do with a fourth or more of the world's mortality. A dozen illustrations selected from a couple of hundred of my cases of tuberculosis, taken at random, ought to convince the most skeptical on this point.†

Averaging the last thousand of my tubercular cases seen, extending back about six years, I have the following results to present: Inheritance, thirty-eight per cent.; non-inheritance, sixty-two per cent.; of the former, forty were cases of either extreme or double inheritance, while of the latter, in twenty there was almost positive proof of infection, as when a husband or sister was nursed by the patient. The large percentage in the heredity class (thirty-eight) should be explained as due to the many factors allowed in indicating a family tendency—viz., if a father or mother, or two or more of either aunts, uncles, or grandparents, or two or more of brothers or sisters died of consumption.*

This evidence is corroborated by the experience of such distinguished specialists as Dr. J. E. Pollock, Dr. Austin Flint, Sr., Dr. Walshe, Dr. Cotton, Dr. C. Theodore Williams, and Dr. Edward Smith, of London.† It is thus true that heredity, which I believe is underestimated in our usual calculations, plays an important part in the dissemination and perpetuation of tuberculosis. I do not attempt here even to discuss the possibility of a direct transmission of the bacilli of tuberculosis through the ova or spermatozoa.

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* Dr. Greswell describes such an instance in England, where after the death of two calves, the progeny of a brother and sister of a noted Shorthorn family (and these the result of like inbreeding for two generations back), he succeeded in keeping a third, a bull calf, alive by repeated bleeding and the use of digitalis, and finally, by the aid of three foster mothers, the fellow was reared, and at one year of age was sent to Australia weighing over twelve hundred pounds.

† For instance: 1. Male, seventeen; mother had three children and died at forty-three of consumption when this patient was nine. One other of these children, a sister, died of consumption at seventeen.

2. Male, nine; an only child of a possibly tuberculous mother, one of a family of seven children, four of whom had died of consumption; and the father, one of a family of nine, five of whom died of the same disease, and the father died of phthisis when this patient was two months old.

3. Female, twenty-six; mother died of consumption, also patient's two sisters and a brother; another sister is insane, and the majority of a large family (ten) died young.

4. Male, thirty-eight; mother died of consumption at fifty-five, also her father and her two brothers and a sister; father's mother also.

5. Male, thirty-three; mother died of consumption; out of her eleven children four are living, and three brothers and a sister have died of the same disease.

6. Male, thirty-five; mother and father cousins; five out of their eight children died young.

7. Male, thirty; mother's father and mother were cousins; father and mother are healthy, but six out of eight of their children died at from fourteen to thirty of consumption.

8. Male, twenty-eight; mother and father cousins and now well; family intermarried for three generations; five out of patient's eight sisters died of consumption.

9. Female, twenty-six; out of four children, sisters, two have tuberculosis and the other two have died of it. Mother died of "tumor of the liver" at sixty-four, and three out of six of her brothers and sisters died of consumption.

10. Female, twenty-four; father died of consumption at thirty-four and three out of his children died of the same disease; nine in father's family and all died before thirty, much like father.

11. Male, twenty-three; father and mother both died of consumption; father had hæmorrhages at twenty-one and died at forty-two, when this patient was seven; mother was weak and small and died eight months after his birth.

12. Female, twenty-three; father died of cancer at sixty-three, mother of consumption at fifty-three, and two sisters out of six children died of consumption.

* Dr. J. E. Pollock's analysis of twelve hundred cases, giving inherited tendency in a little over thirty per cent., undoubtedly did not include any record of the brothers and sisters. (See *The Elements of Prognosis in Consumption.*)

Dr. Austin Flint, Sr. (*Phthisis*, page 73) found in two hundred and twenty cases of phthisis a ratio of twenty-four per cent. in which what may be considered positive inheritance existed.

Dr. Walshe (*Diseases of the Lungs*) found that in twenty-six per cent. of his consumptive cases one or both parents had died of the disease.

One thousand and ten cases of the Brompton Hospital report included only parents, and gave an average of 24·4 per cent. Dr. Cotton's thousand cases, mentioned by Dr. C. Theodore Williams, in his work on pulmonary consumption, included parents, brothers, and sisters, and gave 36·7 per cent., while Dr. Williams's own list of a thousand cases gave 48·4 per cent.; but his estimate included cousins and a single brother or sister, while in my list I have required two of the latter only, or of uncles or aunts or grandparents, to establish a family tendency.

Dr. Williams concludes: 1. Family predisposition prevails among and exercises a more decided influence on females than on males, and the former have a greater power of transmission than the latter. 2. Fathers transmit more frequently to sons and mothers to daughters than the converse. 3. Paternal inheritance, while most unfavorable for the males, is less so for females, as it generally includes an increase of resisting power. 4. Maternal inheritance is unfavorable for both sexes and most so for the males. 5. Double heredity exercises the greatest influence and affects sons more strongly than daughters. 6. Family predisposition does not directly shorten the duration of the disease. 7. It precipitates the onset of the disease, and this shortens the duration of life.

† Dr. Edward Smith, of London, analyzed a thousand cases of consumption as to inheritance, and found, of six hundred males and four hundred females, there was inheritance in about twenty-four per cent., and these patients were members of large families averaging 7·5 children to the family. Of these children forty per cent. had died, and of the married patients' children thirty eight per cent. had died, which, considering the average age of these patients at the time of inquiry—viz., 28·8 years—are unusual percentages. In forty-three per cent. the general state of the health of these consumptives' children was bad, and abortions had occurred in forty-six per cent. of the patients who were childbearing married women. Aside from the evidence adduced that these patients had been born feeble and had feeble and short-lived children, it was further conclusively shown that a large majority, seventy per cent., had suffered from the effects of injurious occupations, and many had been injured by the anxieties and immoralities of life. In fact, as usual with this class, they were an unpromising lot to propagate from, and in many instances so were their progenitors.

This much we are certain of, that there is a transmission to offspring from parent or parents of a remarkable susceptibility, and of peculiarities of blood and vitiated vitality, which furnish the required pabulum or field for the growth of that microbe. The soil and conditions under our present civilization are constantly made more favorable for the development of the disease, while our ability to combat it is also increased under our advanced knowledge of its ætiology and arrest. But with all our splendid climatic and other advantages arrest is not the eradication of the disease; on the contrary, the total of hereditary influence is necessarily increased because more affected persons survive. Undoubtedly the increasing average of longevity of civilized people is in no small degree due to the prolongation of the lives of chronic invalids. Thus it becomes an open question, Do not the valetudinarians equal the healthy in longevity? Consequently it results that Darwin's law—the survival of the fittest—is in danger of becoming obsolete, while the total of bad inheritances is in no sense lessened. The vicious seed is not destroyed, but preserved, to be again mixed with the good "Like begets like," only more so in the case of these recovered consumptives, and it becomes a serious problem how a community like that in Colorado, largely made up of recovered invalids, will be governed in future, that a normal state of health may be assured to her inhabitants.

SECOND PROPOSITION.—*The present civilization stimulates the intellectual and nervous system to such an extreme as to injure the physical (reproductive) powers and favor sterility.*

Man more than any other animal is made by his environment, because his capabilities for influence therefrom are greater. The most distinctive characteristic of man, as compared with animals, is emphasized in effective language by Henry George in his *Progress and Poverty*: "He is the only animal whose desires increase as they are fed; the only animal that is never satisfied. The wants of every other living being are uniform and fixed." The only use other beings "can make of additional supplies or additional opportunities is to multiply. But not so with man. No sooner are his animal wants satisfied than new ones arise." Man parts company with the beast when the wants of food, shelter, and the gratification of the reproductive instincts are satisfied. Then his evident destiny is away from and above the beast; it is no longer quantity which is man's incentive, but quality. "The very desires that he has in common with the beast become extended, refined, exalted. It is not merely hunger, but taste, that seeks gratification in food; in clothes he seeks not merely comfort but adornment; the rude shelter becomes a house; the indiscriminating sexual attraction begins to transmute itself into subtle influences, and the hard and common stock of animal life to blossom and to bloom into shapes of delicate beauty. As power to gratify his wants increases, so does aspiration grow."

This mastering incentive to excel, admittedly the source of improvement of the race in refinement and power, is nevertheless undoubtedly a principal cause of the decadence of that race in physical well-being. There is a weakening at the top, portending the not distant extinction of that quality, unless it be constantly replenished from the lower orders of the race.

In the social world the unfortunate demands of caste and the appreciated cost of the honors and responsibilities of parentage—each generation seeking to outstrip its predecessor in the comforts and refinements of life—too often furnish excuses for a celibacy or a state of immorality which deprives the earth of what ought to be, under more favorable circumstances, its most prosperous increase.

In the intellectual world the same incentive to excel, the demands of time and study necessary to proficiency in professional life, furnish further and additional excuses, with those who do marry, for a delay in assuming the responsibilities of parentage, till the total effect can be seen to be the gradual extinction of these higher classes.

Kidd, in his *Social Evolution*, nicely illustrates this loss of productive years through delayed marriage among the intellectual classes, and seconds Dr. Ogle in his conclusion, read before the Statistical Society of London in March, 1890, "that the lower the station in life the earlier the age at which marriage is contracted, and the difference in this respect between the upper and lower classes is very great indeed." Galton, in his *Hereditary Genius*, makes a comparison of one class of men who marry at, say, twenty-two years of age and another at thirty-three—the latter presumably representing those in professional life—and shows that, allowing for the usual progeny which would be expected from such differences alone, the former class in a single century would increase two times and a half over the latter. In two centuries the progeny of the first class would six times outnumber the second, and in three centuries more than fifteen times. The exact figures as to the average marriage age of different classes are given in the English census: For miners, twenty-four, and of their wives, twenty-two and a half years; while the ages for the professional and independent class are seven years more for the husband and four years added for their wives. Here is an actual difference, considering the few in the upper compared with the many in the lower grade, which is a positive proof of the numerical weakening of the intellectual class.

This argument is independent of one probably equal in its importance (could all the facts with reference to it be presented)—viz., that the shirking of the responsibilities of motherhood is successfully carried on to a probably much greater extent among the higher than the lower orders of civilization. The tendency to sterility is greater, independent of the above, as will be inferred later on. Again, the proportion of permanent bachelors among the professional and independent classes, as found by Dr. Ogle, is far above the rest.

This all serves to confirm the statement of Royce, in *A Study of Genius*, that "mental exertion actually restricts the reproductive energy." This tendency to degeneration and to consequent race extinction among those classes devoted to advanced intellectual pursuits is by no means a peculiarity of sex. That women are not exceptions to the rule is shown by the remarkable paucity of healthy living children born of members of high-class women's debating and literary clubs, as well as of authoresses, lecturesses, and female physicians.

The practice in England of purchasing a title by heiresses reveals a remarkable tendency to sterility in those high-born females. Of course, according to English law, they must have been usually the only child in order to have inherited; and the physical degeneracy of their noble parents shows itself in their own inability to continue in existence either the strains of their own families or that of their purchased peers. Galton (*Hereditary Genius*) remarks this tendency and concludes: (1) Out of thirty-one peerages there were seven in which the hereditary influence of an heiress or coheiress affected the first or second generation; that in sixteen out of seventeen peerages their influence "was sensibly an agent in producing sterility"; (2) that the direct male line of no less than eight peerages was actually extinguished through the influence of the heiresses, and that six others had very narrow escapes from extinction owing to the same cause. Out of twelve peerages that have failed in the direct male line no less than eight failures are accounted for by heiress marriages; finally, that one hundred marriages of heiresses resulted in an average of four children born to the family, while to one hundred peers not married to heiresses the average per family was over six. This evidence of degeneration is the more striking in view of the great incentive to these peers to perpetuate their line through a male offspring. How subtle are these proofs of the destiny which awaits that class which thus ignore the laws of Nature!

When we come to consider the lives of those in positions of power and influence, chiefly because of wealth, the evidence of this law of decadence is not less startling. We do not have to go back to the Roman Empire, when the Romans, under Cæsar, created from the plebeians a competent number of new patrician families, "in the hope of perpetuating an order which was still considered as honorable and sacred."

Says Benjamin Kidd: "The existing aristocratic families among the modern European peoples are continually undergoing the same process of decay. The manner in which the English aristocracy (which has been to a large extent recruited from those who, in the first instance, attained to the position by force of character or intellect) is continually dying out has become a commonplace of knowledge since the investigations of Galton, Evelyn, Shirley, and others threw light on the subject. Only five out of five hundred of the oldest aristocratic families in England at the present time can trace a direct descent through the male line to the fifteenth century." In France and in all other countries where there is an aristocratic class the same state of things is known to exist. There is something radically wrong about aristocratic and plutocratic life. Perhaps it is the greed and pride engendered by wealth and power that invariably lead to this decadence by extinction which Nature imposes upon those classes and systems existing in contravention of her laws.

THIRD PROPOSITION.—*The social, commercial, and manufacturing phases of our civilization favor indoor and effeminate modes of life which are detrimental to successful development, and inheritance propagates the depreciated life force.*

The changes in the economical conditions of our times, compared with those of fifty or one hundred years ago, are too well known to need extended proof. These changes are particularly noticeable in the size of the family and the employment of its members. For instance, take the history of any family, and where are the representatives of those who constituted an industrial household in old New England times? As to numbers, according to a genealogy I have in mind, the families of eight to twelve children, nearly all hardy representatives of the agricultural or professional classes, have dwindled down in six generations to from one to five members to a family, and these chiefly devoted to clerical or indoor occupations. Then society was made up of the producing and the professional classes. Now, the growth of invention, the multiplication of machinery, and the centralization of mechanical industries in the cities has built up a vast middle class, between the agricultural and professional, who far outnumber the others. Referring to the statistics of the last census (1890), and classifying those engaged in what may be considered as outdoor occupations in contrast with all others, we have the following result: Agriculture, fisheries, and mining, about nine million souls; professional service, domestic and personal service, trade and transportation, manufacturing, and mechanical industries, altogether about thirteen million seven hundred thousand souls. In how many offices, shops, or factories the clerical force and the detail toilers many times outnumber all others connected with those establishments! There is, then, much more of confinement to indoor life, whether in sweat shop, factory, or counting house, and long hours, cramped positions, and jaded nervous systems help to constitute and establish a defective parentage, if forsooth marriage is consummated at all.

FOURTH PROPOSITION.—*The independence and self-supporting of women in clerical positions removes from the probability, if not the possibility, of successful motherhood a considerable proportion of the so-called gentler sex, through the resulting great decrease in matrimony and the exhaustion of the vital powers of women in nerve-taxing occupations.*

It is not merely that there is an increasing disinclination of intelligent women to take upon themselves what to the "new woman" are the unappreciated honors of motherhood, nor solely that under the fostering influence of female suffrage women are encouraged to assume the prerogatives of men and drive them from many clerical duties the women can confessedly perform just as well; but the tendency of social life and business economics is toward making way for the employment of women in business circles, and granting to them the gratification of their new ambition—their so-called "enlarged sphere." One needs only to compare the records upon this point of the census of 1890 with that of 1880 to see the force of this argument. Of those engaged in all business occupations tabulated, the males increased 27·6 per cent., while the females so employed increased 47·9 per cent.; or, to specify classes of occupations, under professional service males increased 48·5 per cent. and the females recorded 75·8 per cent. increase. In domestic and personal service, males increased 16 per cent., females 41·2 per cent. In trade and transportation, males increased 71·7 per cent., females 263·2 per cent. In manufacturing and mechanical industries, males increased 46 per cent. and females 62·9 per cent.

The curse of child labor, too, early "breaks them into" lines of confined and wearing occupations, depriving young girls of needed schooling and physical development which would otherwise fit them for maternity.

Considering the chief and most enduring function of women to be the bearing and guidance of the young, what a large class of them fall short of this their created purpose, to the extent that they are simply passing incidents of the world in which they had lived. These healthy, independent women are, however, better suited for motherhood than those who are left to take their places. Civilization has to fill innumerable gaps and start new genealogies from baser materials.

It is a question of quality of offspring, not quantity; no argument in favor of increasing the population of the earth is intended; but it *is* desirable that the most civilized peoples of the globe should hold their ground and not be crowded out of existence by their failure to comprehend Nature's laws.

Evidence sufficient could be adduced, did time permit, that the ancients were wiser in selecting the fittest to live and become citizens than we of this sentimental and unsystematized age. There is only time now to mention the claims of such writers as Galton, Lecky, Kidd, and Gladstone that intellectual power was actually higher in Grecian times than in our own.

FIFTH PROPOSITION.—*The present unaided efforts of natural selection should be supplemented by warning the young before matrimony; the masses ought to be educated physiologically that the laws of heredity may be understood, that physical development and mental strength may be appreciated, and the responsibilities of parentage recognized. The State and the nation have a duty to perform.*

Dr. Smith, of Greencastle, Ind., asks these questions: "Can not science be made to aid or even displace sentiment in mating the sexes? Would men and women love each other less if they knew each other to be anatomically perfect? Is it necessary carefully to conceal from lovely woman the chief reason for which God created her until after she is married and has the fact suddenly thrust upon her mind that she has made a mistake which can never be corrected? Should we not use the same intelligence that the breeder of stock or the horticulturist uses?" *

There is very little question in my own mind how the great majority of the medical profession would answer these queries, and were it not for our servitude to the very sentimentalism we deplore, and our deference to custom, we would organize to put in effect the reforms needed. As it is, the question is now before us and must be met. Its importance is foreshadowed in the words of Alexander Walker when he says: "Improvement of their race will be the prerogative of the highest minds, and will be more eagerly sought for than ever was the improvement of the inferior animal breeds." The question is a vital one to every human being, and if not recognized to be so before marriage it surely will be afterward. Let it be argued that "love will find a way" to defeat the will of science and continue to disregard Nature's laws. What of that? The great mass of young people do not know or can not comprehend the import and responsibility of marriage. They mean well enough, but they have not been properly educated in this matter. Only put before them in convincing manner the knowledge of physiology and heredity, with proper rules for the selection of their partners in life, and such instruction will be gratefully received and in many instances conscientiously acted upon. Right here is where the greatest want will be felt—namely, the need of proper literature on this subject for such young people. So far as my knowledge goes there are no works extant in the English language which fully answer the required purpose. They are too apt to expound useless generalities with a seeming fear of telling too much of scientific truth, or going to the other extreme, which is worse, and appealing to sensuality. What is wanted is the unemasculated and scientific truth given in plain, honest language, so there is no doubt as to its meaning. The nearest to such a book I know of is Alexander Walker's *Intermarriage, or the Mode in which and the Causes why Beauty, Health, and Intellect result from Certain Unions, and Deformity, Disease, and Insanity from Others* * (Lindsay & Blakiston, Philadelphia).

It is not the purpose here to expound the "law of opposites" in the selection of partners in marriage in order that the best results may accrue in happiness and offspring, nor to explain the many limitations to this law, as when extremes meet in the intermixture of races. (N. B.—The lack of resistance to disease in mulattoes and their great susceptibility to consumption.) I should, however, consider my essay incomplete if I did not formulate from my own considerable professional experience some *rule of choice* which will help these young people to steer clear of those unions which result in tuberculosis of progeny. Not to make an effort in this direction would be to do myself and my convictions an injustice when I attempt to pronounce upon the criminality of those people who will knowingly bring an innocent soul into this hard life handicapped by inherited disease or weaknesses.

Let us throw around the sacred rites of matrimony more safeguards against the pitfalls of entailed suffering, both mental and physical.

Let it be considered, please, that the rule I submit is not only not exactly perfect, but limited in its scope. It is only submitted as better than none at all, and so entitled to allowance for its crudeness and perhaps some credit for its originality.

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* *Influence of Heredity in producing Disease and Deformity. The Remedy.*

* The gist of this work is the announcement of a law of Nature that, when the sexes are in their highest vigor and perfection, "it is the male that predominates in giving the locomotive system, character, and shape to progeny, and it is preferable that the female should give that system—the vital—which in her is always most developed." Thus, according to this authority, we have "two series of organs, on which both life and locomotion respectively depend, in two opposite successions and combinations, variably in beings of the same variety and invariably both in different varieties (crosses) and when closely and long restricted to one family" (in-and-in breeding).

Rule for Choice of Partners to Avoid Consumptive Offspring.—Find the proportion of all the mother's and father's and their married brothers' and sisters' children born—*i. e.*, the party's parents', uncles', and aunts' children—who were living at five years of age.

1. Then, excluding deaths wholly attributable to accident or having nothing to do with disease, if less than eighty per cent. of such children were alive at that age, there is reason to suspect a weak strain in that lineage.

2. If less than sixty per cent. of such progeny were then alive, there is strong proof of such degeneration.

3. Add to this, or consider it separately, that either the party's mother or father or any two of his or her grandparents, uncles, aunts, brothers, or sisters died of consumption, cancer, or scrofula, and the proof of some defective biology in that family strain is still more evident.

4. Add to this the party's health not good, even so little defective as "never very robust," or now flat-chested and under weight, then his or her outlook for matrimony should be much impaired.

5. Double this tendency to degeneration by uniting two family lineages equivalent to 3 on one side and to 4 on the other of above-described limits, and a sin will be committed by such marriage only second to the marriage of a healthy person to an invalid in active tuberculosis, which latter should never be consummated under any circumstances.

If time permitted, many conditions might be mentioned which would intensify the gravity of this reckoning, as, for instance, by a strain of insanity, intemperance, or scrofula existing in progenitors' families, or the concomitant conditions, such as poverty and a climate favoring consumption, inseparable from the contracting parties' lives. Of course, any rule is arbitrary and may perhaps be favorably modified, as with the first (1) and second (2) of above classifications, if the grandparents and parents are living and of good age, or the children born averaged five or more to the family, or if the possible contracting parties are of opposite temperaments and physiques.

Let Nature through her known laws speak in these warning tones to the young man selecting a partner for life: You may be an Apollo in form and have an ancestry of centenarians, but you will have great cause for regret if you marry a girl of consumptive lineage who has weak digestion and vital organs. And to the young woman likewise: You may be a Venus in form and the loveliest woman in the land, but if you sell yourself to a brute of a man, gross and intemperate, though high in wealth and station, his degeneracy may beget from you an idiot child, or, if through your superabundant sentiment and sympathy you marry a consumptive invalid, not only may you become infected yourself, but you will perpetuate the curse in your offspring if, unfortunately, you have any.

Considering that the object of matrimony is the begetting of children, it would be a good thing for the State to legally recognize that it is as much a sin for an invalid in advanced consumption to marry as it is for a leper or insane person. As for two tubercular or scrofulous persons marrying each other, it ought to be prevented by law if possible; otherwise it ought to be understood that such tainted unions are not for the purpose of progeny.

Since the law is not allowed to interfere and help solve this problem, the only recourse is education. With us in America this is the saving grace from the universal law of degeneracy. The lower strata are constantly made capable and worthy to take the places made vacant by degeneracy in the upper. The common brotherhood of man, as exemplified in free schools and universal education, is helping to supply the sinew and vitality from the middle and rear ranks which the front rank sadly needs.

Therefore the fostering and perfection of our common, grade, and academic schools are duties which should be dear to the heart of every true American. To give character, mental force, and healthy bodies, fit for the propagation of a truly noble race, a change in our systems of education is needed. The introduction of physical training and the regular superintendence of the physical condition and habits of scholars in all grades of schools should be features in all systems.

The introduction of science teaching early in the course, and the later substitution of proper text books and the teaching of physiology and anatomy, are likewise essential features; and then, either in seminaries or colleges, the maturer mind of the scholar, both male and female, needs to have direction given to all this previous acquirement by books written for the purpose. The object of such literature is to have each scholar train herself or himself to present in her or his own person a "*mens sana in corpore sano*," embellished by all the beauty, loveliness, and grace for women, and capability, strength, and vigor for men possible. Finally, the object should be to fit each one to choose wisely her or his mate in life, and to understand the whys and wherefores of this choice. Here is a work for the State, or perhaps for a national body like this association, to do—namely, the selection of a proper committee to act as censors of such literature, which productions, in turn, perhaps might be elicited by proffered rewards commensurate with the skill and knowledge required. The formulation of such a plan, by which this matter can be properly presented to young people before marriage, is an object worthy of this association or any other similar body of men.

Through their State boards of health the States can do and are doing good work in guarding the public health and aiding in the prevention of disease. But in order that the work there may be united and made more effective, all laws and systems pertaining to the preservation of health ought to be centralized.

Heredity and marriage, so intimately associated with the statistics of disease; infection and contagion; prevention of endemics, epidemics, and food adulteration; quarantine and inland sanitation; the knowledge of climates and seasons; the protection and preservation of life of those journeying by common conveyances both on land and at sea—all are parts of one whole, which ought to be recognized as an independent department of our great Government.

The guarding and regulating the health of the people is a national duty, coequal with the purposes of any of the departments which have gradually been added to constitute, through their representatives, the President's cabinet.

The intelligence of the people, and their belief in the importance of the subject of public health, finds now timely expression in the popular demand, made by the united medical profession, that a national board of health be established, thus recognized and constituted with its head a cabinet member.

It is hoped that such a representation of the health needs of our people will be one of the crowning features of our Government at Washington.

A CASE OF MULTIPLE NEURITIS
DUE TO A LONG BICYCLE RIDE.

By FREDERICK T. SIMPSON, M. D.,
HARTFORD, CONN.

To those who are accumulating data regarding the effects, beneficial or otherwise, of the use of the bicycle, the following case may be of interest:

H., aged twenty-six years, accountant, of rather delicate physique, but in good health and of perfectly correct habits, rode fifty miles on a bicycle, August 31st. He usually rode short distances, and this was his first long ride. According to his account the road was rough and hilly, and he got very hot and sweaty going up hills and felt icy cold coasting down hills. Beyond the natural fatigue of such a journey, no special effects were noticed for a week. Then he began to have queer sensations in the face, which passed off, however, in a day or two and did not return. He next noticed (twelfth day) a slight numbness in the hands. This was increased the following day, involving also the feet. The third day the condition was worse, the peculiar "electrical" sensations being felt on his chest also. He now consulted his physician, who found existing a moderate degree of anæsthesia and ataxia besides the paræsthesiæ. I saw him some three days after this, and noted the following condition: Subjective feelings of numbness in the forearms and hands, legs and feet. Grasping these parts caused disagreeable "electrical" shocks. Partial analgesia, tactile anæsthesia, and thermo-anæsthesia in these parts, most marked in the upper extremities. Patellar reflex not much affected, but if anything somewhat lessened. Moderate degree of ataxia of both upper and lower limbs. Movements at shoulder and elbow joints good, but of hands and fingers considerably affected. Grip: right, 35; left, 35; normal, 55 to 60. No pain or tenderness in the back, nor muscular stiffness anywhere. No head symptoms; bowels and bladder undisturbed. Pulse, 84; temperature 98·5°. Four days later I saw him again. Symptoms more marked, especially in the upper limbs. Grip 25 on each side. Loss of sense of position marked and complained of by the patient. Faradaic response feeble, but not lost. He lived in an adjoining town and I did not see him again, but I learn that his condition was the same some two weeks later, when his father came and removed him home to another part of the State.

The diagnosis of multiple neuritis in this case seems to be very clear. The interest centres in the relation of the bicycle ride to the condition. The usual causes of multiple neuritis could be entirely excluded. A week before the ride, the patient fell on his right hip on a plank walk. This was only an ordinary fall and no importance attaches to it. Nothing could be elicited in the condition, habits, or experiences of the patient which could account for this nervous disorder, other than the bicycle ride, and in the mind of the writer its ætiological relation in the matter is perfectly clear.

THE ADMINISTRATION OF NITROGENOUS THERAPEUTIC AGENTS.

By SAMUEL G. DIXON, M. D.,
PHILADELPHIA.

It will be generally conceded, I trust, that the more truly logical the proposed treatment of any disease may be, the greater will be the probability of ultimate success following its application. The fact that we may not be able at all times to discover or to say what are the correct premises and conditions underlying a given pathological problem does not argue against this fundamental principle; but it all the more behooves us that we should give such thought to the application or use of our therapeutic measures that their action may be in consonance with the normal harmony of the bodily functions, or else such as to restore that harmony if disturbed.

For example, many members of the profession do not seem to realize that in certain obscure or inveterate maladies a faulty condition of the digestive or assimilative functions is at the root of the trouble. If the cells that elaborate the digestive secretions are defective or altered in their action as a result of a chronic malady, we can scarcely expect diet alone to cure that malady; and if both digestion and assimilation are at fault, it may be found wise to supply both nourishment and stimulation to the blood directly, in order to bring about such changes in the tissues governing digestion and assimilation as will enable them by their normal action to properly supply the needs of the organs more immediately and gravely involved. Until we are better acquainted than at the present with the mysteries of metabolism continually taking place in the human economy, it may not be possible to exactly indicate the best methods to follow along this line; but from my experience in the hypodermic administration of nitrogenous substances and the results obtained, I feel that that is the logical manner in which that class of therapeutic agents should be exhibited.

In this way we are probably enabled to act directly upon the metabolism of the system; while, if such complex substances as animal extracts, nucleins, and the like are administered by the mouth, there is no guarantee, so far as I am aware, that they will not be changed in character by the various secretions of the alimentary tract, even though they may be soluble and apparently capable of immediate absorption through the gastric and intestinal walls.

Moreover, granting that these organic substances may not be affected by the digestive secretions and that they are perfectly soluble, the condition of the alimentary mucous membrane may be such, owing either to a local or to the general constitutional disturbance, as to prevent their absorption into the blood or lymphatic circulation. This may seem, at first sight, a far-fetched objection, but a moment's reflection will recall to every medical man a number of cases where absorption has been totally suspended, often in apparently trivial cases, but more especially when there is grave constitutional disease and the vital energies have a minimum efficiency.

Other illustrations might be given of the value of giving serious thought, not only to the selection of our remedies, but to the *logical* methods of administration; but the single one given above will suffice to emphasize the point. My reason for making the present note is that certain circumstances have recently been brought to my attention that make me feel that the importance of the matter in question is not so thoroughly understood as it should be, or that there is a tendency to carelessness in attention to necessary details.

It is important to remember that the use of the entire class of remedies above referred to is based on new theories and is entirely new in practice, and that perhaps fully as much depends on their proper administration as upon the substances themselves. Doubtless as our knowledge of physiological and pathological chemistry increases the *rationale* and proper method of using them will be clearer and more definite, but until then it all the more behooves us, as I have already said, to give every thought to applying and using our knowledge in the manner most logically discoverable and consistent.

A CASE OF
UNILATERAL EPHIDROSIS OF THE FACE.

By A. SCHIRMAN, M. D.

The following rare and interesting occurrence, which was the result of an improper minor surgical operation, probably performed by an incompetent person, has come under my observation:

Miss Jennie L., twenty-four years old, came to my office, complaining that, while she was eating, the right half of her face was always bathed in perspiration while the left side was usually dry.

On examination, I found behind her right ear, in the fossa retromaxillaris, adjacent to the mastoid process, a long, very deep, and radiated scar (not parallel with the direction of the salivary duct), which remained after a periparotid abscess (from mumps) that had been carelessly incised some years before, as I was told.

The patient, in giving her history, said that she had suffered from an attack of typhoid fever, complicated by an inflammation of both parotid glands, which had become hard, painful swellings around the ramus of each jaw; the left gland terminated in resolution, and the right gland discharged pus as it had been opened.

Miss L. stated that sensibility to pain had become notably lessened after the wound healed and formed a cicatrix on her right cheek in front of the ear. This region was red and became covered with perspiration particularly when she began to eat. The loss of sensation gradually diminished, but the tendency of the right side of the face to perspire and redden remained until the time when I first began to attend the patient. Whenever Miss L. put any food into her mouth, particularly on the right side, and especially if it was something sour, such as lemon, there appeared in a few seconds redness of the ear, which spread to the adjacent regions forward and backward, and grew larger and larger until it reached the edge of the lower jaw. Over this reddened surface, drop by drop, there exuded beads of perspiration, which increased more and more in number until finally they rolled down from the cheek, producing a feeling of warmth thereon. These manifestations, although in a lesser degree, were noticed each time she made chewing motions; they were also produced by electric irritation of the muscles of the cheek, even when the muscles themselves were not influenced by the current. These manifestations were evoked not only by gustatory sensations, as, for instance, when I applied sugar or salt to the oral mucous membrane, but when she was thinking of eating, especially anything tart. On my examining the affected cheek with Weber's circle the points of the instrument were felt as two points in the region of the right ear only. The tactile sensation produced by the circle was more acute in the right cheek than on the left.

The sensation of pain produced with a common pin was less marked, for the patient said that it was greater behind the right ear than behind the left ear. Electro-cutaneous sensibility and electro-muscular contractility were the same on both sides of the face.

The patient's general strength, vision, and hearing were physiologically normal. She did not present any asymmetry except in the right angle of the mouth, which was lowered, the right cheek being somewhat puffed up.

The temperature in both fossæ axillares was normal, but the temperature of the right cheek was higher than that of the left, becoming notably raised when perspiration occurred.

My opinion is that the perspiration occurred independently, and had no relation with the redness.

The ephidrosis unilateralis was caused probably by the injury of the right sympathetic nerve or of the cerebrospinal secretory centre, due to a reflex action in the blood-vessels of the skin, although salivary fistula, usually caused by a wound of Stenson's duct, was absent in this case.

I employed the following treatment: Atropine, potassium iodide, warm sea baths, and galvanism, given repeatedly at intervals for many weeks. The result of this treatment was quite satisfactory. When the patient began to eat there was still a small red area, but the perspiration finally disappeared entirely.

Several months afterward I met the patient, who stated that her general condition was improved and that the redness and perspiration had never reappeared. There was no facial paralysis, no anatomical asymmetry, nor any functional disturbance.

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THE FŒTUS AS A PATIENT.

In the *Journal des praticiens* for November 26th there is an article on the subject of the risks to which the fœtus is subjected in parturition, by M. Demelin, of Paris, in which he remarks that it may be readily understood that the child is often endangered during labor, for a large number of diseases affecting the mother lead to jeopardy of the fœtus, such as the various infectious diseases, febrile or not, such as variola, syphilis, etc., in course of evolution, certain visceral diseases, such as the affections of the heart in the asystolic stage, renal lesions with urinary toxæmia, etc., in fact, all grave conditions which begin ordinarily before labor, and, moreover, are capable of provoking premature birth. The size of the child should also be taken into consideration, for if it is very small it offers a feeble resistance to injury. Protracted labor, premature rupture of the membranes, premature detachment of the placenta, with the hæmorrhage it causes, compression of the cord, and especially its prolapse, are the principal causes of danger to the child, and they should always be considered as possible or probable.

All this, however, says the author, is mere supposition, and more convincing proofs of actual danger to the child are required. Two kinds of symptoms lead us to infer that the child is in peril: 1. Modifications of the fœtal heart sounds. 2. Changes in the amniotic liquid. With regard to the first symptom, says M. Demelin, in a normal condition the fœtal heart beats regularly and rapidly in the interval of the uterine contractions; the pulsations are from 120 to 160, sometimes less, but always more than a hundred if the fœtus is healthy. The beatings are powerful, distinctly perceptible, with an intensity which renders them unmistakable, and there is no synchronous souffle. But a uterine contraction supervenes, and the cardiac rhythm becomes modified, especially if the period of expulsion has begun, and if the membranes of the ovum are already ruptured. On auscultation, when the uterine wall hardens, we find that the fœtal heart-beats, after a very transitory acceleration, diminish in intensity and in rapidity. At the height of the pain they become very slow, and occasionally they can not be perceived, but when the contraction begins to subside they gradually regain their force and rapidity. Slowing of the heart's action, says M. Demelin, should not cause any uneasiness if it is observed during a contraction, but the case is quite different if the cardiac rhythm changes during an interval between the contractions; then it may be said that the child is in peril if the heart-beats become blowing, if they fall below 100 a minute, if they are irregular or very feeble, and, finally, if they become extremely rapid after having been previously slackened, for instance, more than 160 a minute. When the heart-beats fall below 20 a minute, death is near. It is not always easy to practise auscultation, says the author, on account of the movements of the patient, and, if the uterine contractions follow each other without intermission, it is impossible to obtain stethoscopic information. Besides, the child may really be in danger, although the rhythm of the heart-beats appears normal during the intervals. This contingency, which, without doubt, says the author, is exceptional, is nevertheless proved by the sequence of events, and particularly by the modifications presented by the amniotic liquid.

With regard to changes in this liquid, says M. Demelin, the alteration of the cardiac rhythm gives information as well before as after the rupture of the membranes, and it is in this that the importance of this symptom lies. The amniotic liquid which is discharged at the moment of the artificial or spontaneous rupture of the membranes should be transparent, yellowish in color, with a peculiar odor, but not fœtid. When these characteristics are retained the child is not in danger. If the liquid, however, becomes of a greenish color, more or less dark, we should be alarmed, and if it becomes thick, like a thick soup, there is still greater reason for alarm, especially when there is a peculiar fœtid odor noticed. At the very time when the amniotic liquid is infected the heart-beats may appear to be normal, and the situation is all the more alarming because the danger is insidious, for it is not perceived until a discharge of amniotic liquid occurs. Often it is then too late to save the child; it may be extracted living, but death nearly always follows from infection. When the fœtus presents by the breech a green color of the amniotic liquid, due to the meconium, is of no grave significance. The uterine contractions then compress the abdomen and expel the meconium, which is found in similar circumstances in rather large clots instead of being liquid. In other presentations the presence of meconium in the amniotic liquid is always an alarming sign as regards the child; if the liquid is very thin the danger is greater than when there are masses of meconium, and the maximum of gravity is reached when there is much fœtor and when, at the same time, there are profound modifications in the rhythm of the heart-beats. On the whole, says the author, a green color of the amniotic liquid always indicates a serious danger for the child, and perhaps it has a greater prognostic importance than abnormal action of the fœtal heart.

With regard to the treatment in such cases, says M. Demelin, nothing is simpler, theoretically, at least. Labor must be terminated as soon as possible, and it is important to work rapidly, but without violence or precipitation, for, although the child may be able to resist asphyxia, it is very susceptible to traumatism, and resuscitation is more easily and surely accomplished after a slow operation than after a rapid and violent intervention.

MINOR PARAGRAPHS.

A NEW JOURNAL OF EXPERIMENTAL MEDICINE.

We are glad to see it announced that in January there will be issued the first number of the *Journal of Experimental Medicine*, a quarterly, to be edited by Dr. William H. Welch, of the Johns Hopkins University, Baltimore, and published by Messrs. D. Appleton & Co., of New York. The associate editors are to be Professor H. P. Bowditch, of Boston; Professor R. H. Chittenden, of New Haven; Professor W. H. Howell, of Baltimore; Professor J. George Adami, of Montreal; Professor W. T. Councilman, of Boston; Professor T. Mitchell Prudden, of New York; Professor John J. Abel, of Baltimore; Professor Arthur R. Cushny, of Ann Arbor; Professor H. C. Wood, of Philadelphia; Professor R. H. Fitz, of Boston; Professor William Osler, of Baltimore; and Professor William Pepper, of Philadelphia. A most valuable and scholarly journal may be looked for.

THE BILLINGS TESTIMONIAL.

We learn from the *Medical News* that on the evening of the 30th of November a number of the American subscribers to a fund for Dr. John S. Billings dined in Philadelphia, and that after the dinner Dr. Billings was presented with a check for $10,000 inclosed in a silver box on which was the following inscription: "To John S. Billings, from 259 physicians of the United States and Great Britain, in grateful recognition of his services to medical scholars."

"GREATER NEW YORK" IN MEDICINE.

As is the case with all large cities, so far as we know, the scientific and social organizations of New York include members who live without the limits of the municipality. The first society to recognize this state of things in its title perhaps is the new Association of the Albany Medical College Alumni of Greater New York, the formation of which is announced elsewhere in this issue. We wish the new association all success.

"KNOCK-OUT DROPS."

Dr. W. H. Munn writes to us that two specimens of "knock-out drops" that have come into his possession have been found to consist of a fifty-per-cent. solution of chloral hydrate.

ITEMS, ETC

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 10, 1895:

DISEASES.	Week ending D		Week ending Dec. 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	28	1	19	4
Scarlet fever	52	2	75	5
Cerebro-spinal meningitis	2	2	0	0
Measles	186	14	223	18
Diphtheria	229	27	269	32
Small-pox	1	0	0	0
Tuberculosis	72	118	96	98

The East Texas Medical Association will hold its annual meeting in Tyler on Tuesday and Wednesday, January 14th and 15th, under the presidency of Dr. J. D. Philips, of Edom. Titles of papers should be sent to the secretary of the programme committee, Dr. E. A. Woldert, of Tyler, as soon as possible, not later than January 5th, in order that the proper classifications may be made.

The St. Louis Academy of Medical and Surgical Sciences was organized on November 6th. The constitution of the society subscribes to the code of ethics of the American Medical Association. The membership is limited to fifty.

We are informed that no one can become a member of the academy unless he possesses a good literary and medical education. As evidence of his literary qualifications and ability as a scientific worker he must deposit with his application a thesis, a pathological specimen with descriptive text, a drawing of a normal or abnormal specimen with text, or some other evidence of his worth. The evidence is passed upon by the committee on credentials. If the evidence is accepted, the ballot is taken. Two negative votes will defeat a candidate. The following officers were elected for the ensuing year: President, Dr. George W. Cale, Jr.; vice-presidents, Dr. James Moores Ball and Dr. Arthur E. Mink; secretary, Dr. Emory Lanphear; treasurer, Dr. Wellington Adams; orator, Dr. Thomas O. Summers; curator, Dr. George Howard Thompson.

Changes of Address.—Dr. Charles Lewis Allen, to No. 1811 H. Street, Washington; Dr. C. H. Chetwood, to No. 109 East Thirty-fourth Street, New York; Dr. Thomas Cleland, to No. 56 West Eighty-second Street, New York; Dr. Eugene Fuller, to No. 252 Lexington Avenue, New York; Dr. H. A. Haubold, to No. 140 East Seventy-second Street, New York; Dr. George Dederic Holsten, from Brooklyn to Essex Falls, Caldwell, N. J.; Dr. Richard Kalish, to No. 36 West Forty-seventh Street, New York; Dr. R. K. Macalester, to No. 108 East Ninety-sixth street, New York; Dr. Leonard F. Pitkin, to No. 911 Seventh Avenue, New York; Dr. George R. Thomas, to No. 2009 South Broadway, St. Louis; Dr. Ervin A. Tucker, to No. 57 West Fifty-third Street, New York.

The Indian Lancet is now the name of our esteemed Calcutta contemporary heretofore entitled the *Medical Reporter.*

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 1 to December 7, 1895:*

Arthur, William H., Captain and Assistant Surgeon, is relieved from duty at Fort Columbus, New York, and ordered to Fort Myer, Virginia, for duty.

Kulp, John S., First Lieutenant and Assistant Surgeon. The leave of absence granted him is hereby extended one month.

Marine-Hospital Service.—*Official List of the Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the Fifteen days ending November 30, 1895:*

Fessenden, C. S. D., Surgeon. Placed on waiting orders. November 22, 1895.

Mead, F. W., Surgeon. Granted leave of absence for thirty days. November 21, 1895.

McIntosh, W. P., Passed Assistant Surgeon. To proceed from Boston, Mass., to Portland, Me., for temporary duty. November 25, 1895.

Pettus, W. J., Passed Assistant Surgeon. Relieved from duty at Buffalo, N. Y., and directed to proceed to Cape Charles Quarantine and assume command of station. November 16, 1895.

Magruder, G. M., Passed Assistant Surgeon. Granted leave of absence for thirty days. November 20, 1895.

Perry, T. B., Passed Assistant Surgeon. Relieved from command of Cape Charles Quarantine and directed to proceed to Buffalo, N. Y., and assume command of service. November 16, 1895.

Stimpson, W. G., Passed Assistant Surgeon. Granted leave of absence for thirty days. November 20, 1895.

Cofer, L. E., Assistant Surgeon. Placed on waiting orders from December 1, 1895. November 21, 1895.

Nydegger, J. A., Assistant Surgeon. When relieved from temporary duty at Mobile, Ala., to rejoin his station at Savannah, Ga. November 27, 1895.

Stewart, W. J. S., Assistant Surgeon. Granted leave of absence for fourteen days. November 29, 1895.

Sprague, E. K., Assistant Surgeon. Relieved from temporary duty at Key West Quarantine and directed to rejoin his station at Mobile, Ala. November 27, 1895.

Prochazka, Emil, Assistant Surgeon. To proceed from Detroit, Mich., to Buffalo, N. Y., for temporary duty. November 16, 1895.

Greene, J. B., Assistant Surgeon. Granted leave of absence for thirty days. November 20, 1895.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending December 7, 1895:*

Hubbard, George C., Assistant Surgeon. Detached from instruction at the Naval Laboratory, New York, and ordered to the Vermont.

Stitt, E. R., Passed Assistant Surgeon. Detached from the New York and ordered to the Coast Survey Steamer Bache.

Barber, G. H., Passed Assistant Surgeon. Detached from the Bache and ordered to the New York.

Society Meetings for the Coming Week:

Monday, *December 16th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society; Cleveland Society of the Medical Sciences.

Tuesday, *December 17th:* New York Academy of Medicine (Section in General Medicine); New York Obstetrical Society (private); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Societies of the Counties of Chautauqua (semi-annual), Kings, Lewis (semi-annual), and Onondaga (semi-annual—Syracuse), N. Y.; College of Physicians of Philadelphia (Section in Ophthalmology); Baltimore Academy of Medicine.

Wednesday, *December 18th:* Association of American Anatomists (Philadelphia); Medico-legal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Medical Societies of the Counties of Cortlandt (semi-annual) and Tompkins (semi-annual—Ithaca), N. Y.

Thursday, *December 19th:* New York Academy of Medicine; College of Physicians of Philadelphia (Section in Gynæcology); Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *December 20th:* New York Academy of Medicine (Section in Orthopædic Surgery); Brooklyn Medical Society; College of Physicians of Philadelphia (Section in Orthopædic Surgery); Baltimore Clinical Society; Chicago Gynæcological Society.

Saturday, *December 21st:* Clinical Society of the New York Post-graduate Medical School and Hospital.

Births, Marriages, and Deaths.

Married.

Brown—Barnwell.—In Adams Run, S. C., on Thursday, December 5th, Mr. Marion Wesley Brown and Miss Charlotte Morris, daughter of Dr. T. O. Barnwell.

Jenkins—Maurer.—In New York, on Wednesday, December 4th, Dr. Edward Pearsall Jenkins and Miss Ida Maurer.

Pulsford—Baldwin.—In South Orange, N. J., on Tuesday, December 10th, Dr. Henry A. Pulsford and Miss Gertrude Baldwin.

Turner—Watkins.—In New Orleans, on Wednesday, December 4th, Mr. James Huntington Turner and Miss Edith McDonald, daughter of Dr. William H. Watkins.

Died.

Bond.—In Evanston, Ill., on Wednesday, December 4th, Dr. Thomas Sheldon Bond, in the fifty-third year of his age.

Jamison.—In New Orleans, on Sunday, December 1st, Dr. David Jamison, aged forty years.

Knapp.—In New York, on Saturday, December 7th, Dr. Gideon Lee Knapp, aged thirty-nine years.

Michael.—In Baltimore, on Saturday, December 7th, Dr. J. Edwin Michael, aged forty-seven years.

Letters to the Editor.

VERATRUM VIRIDE IN THE TREATMENT OF PUERPERAL ECLAMPSIA.

Montclair, N. J., *November 25, 1895.*

To the Editor of the New York Medical Journal:

Sir: I have read with much interest the report of the discussion upon the use of veratrum viride in puerperal eclampsia before the Society of Alumni of Bellevue Hospital which appeared in your issue of November 23d, and also your editorial comments upon this use of the remedy.

As you remark, "experienced obstetricians in general are less forgetful of the virtues of veratrum than its comparative inconspicuousness in current literature might lead one to suppose."

A paper which I published in the *Medical Record* of September 7, 1889, set forth the treatment of eclampsia of which my friend Dr. Love, of Montclair, has made use for over thirty years. He has not lost a patient with childbed convulsions in that period, and reports twenty-four cases, to which I can add two. Dr. Brown, of this place, reports two successfully treated by Dr. Love's method by himself, also two fatal cases treated by other doctors with forced delivery, and I would add one in which I was called in consultation and delivered by version—also fatal. I hope some time to tabulate all the cases which have occurred in this neighborhood and publish the results.

One of Dr. Love's patients had eighteen convulsions before they were arrested by the veratrum.

Dr. Love's plan of treatment is the administration of veratrum viride by the mouth or hypodermically until the pulse is brought below sixty and the convulsions are controlled. He also gives a benzoic-acid mixture, No. 120 in Ellis's *Formulary*, which is:

℞ Acidi benzoici...................... ʒ ij;
Potass. bicarb.. .... ℥ ss.;
Spirit. æther. nit.................... f ℥ j;
Spirit. Mindereri..................... f ℥ ij;
Syr. limonis....................q. s. ad f ℥ vj.
M. Sig.: A tablespoonful every four hours.

If it seems to be indicated, a large dose of calomel is given at first, and its action may be aided by large warm enemata. If the bladder is full and does not empty itself when the bowels act, the water is drawn. The point upon which Dr. Love strenuously insists, and upon which he disagrees with the weight of authority, is *absolute non-interference with the contents of the uterus*, so far, at least, as the convulsions are concerned. He denies that emptying the uterus stops the convulsions, and affirms that where the nervous system is already so poisoned that death from shock is imminent, any further strain upon the thread of life, already stretched nearly to the utmost, is an unjustifiable and needless risk. In certain cases he would not hesitate to bleed, but considers this manœuvre, as a rule, quite unnecessary. For the immediate control of the spasms he would use chloroform if he thought it indicated.

When the accoucheur is called to a woman in puerperal convulsions he should occupy himself entirely with the control of these phenomena and with the elimination of the *materies morbi* so far as practicable. There is no need to bring on labor or to take special pains to accelerate it. If the nervous erethism can be controlled and the kidneys and skin made to act, Nature will deliver the patient sooner or later. If the convulsions come on before labor, Dr. Love controls them and lets the uterus and its contents entirely alone. In his experience labor has always come on within twenty-one days after the first convulsion, and the woman has been safely delivered of a dead fœtus.

So far as I know, Dr. Love's unbroken series of twenty-four successful cases of eclampsia, with the four other successful cases which I have added, is the best series of cases so far published.

Professor Barton Cooke Hirst speaks very favorably of the veratrum treatment of eclampsia in the third volume of Hare's *System of Therapeutics*, and expresses his determination to try the remedy faithfully. If his results have been published I have not been fortunate enough to see them.

As Dr. Edgar pointed out in the discussion before the Bellevue Hospital Society, the operation of Dührssen had failed and must generally fail to give satisfaction, and so I maintain must all operative procedures whatever.

I concur with Dr. Love in asserting that there is no use whatever in emptying the womb; the procedure adds infinitely to the woman's danger and does not strike at the root of the evil. The convulsions may be a concomitant of labor or they may occur long before, and in some cases have appeared a number of days after delivery. They generally occur at the time of labor because the poisoned and weakened nervous system is called upon for a great expenditure of force, and is unable to respond. Like an engine with a defective boiler called upon to pull the train up a heavy grade, more steam is put on, more effort is made, every part of the machinery feels the strain, and the result is an explosion. Suppose the engineer knows that his boiler is weak, is it a good plan to crowd on the steam and drive the engine up the grade as rapidly as possible in the hope that he will get over the dangerous part of the journey before the explosion shall come? By no means. And in the same way it is bad practice to increase the strain upon the vital powers of a human being already almost *in extremis*. The engineer will take part of his train up the grade at a time. He will carefully avoid increasing the pressure of steam one pound above what is necessary, and will run slowly and carefully.

So the good obstetrician should be quite willing to have the labor pains of his eclamptic patients intermit or stop altogether until he can get control of the impaired nervous machinery and can give Nature a chance to eliminate some of the offending matter that clogs and interrupts the workings of the economy.

It is generally admitted that pregnancy is a serious complication of the acute infectious diseases, like diphtheria or typhoid fever. Yet no one has suggested that this element of danger can be removed by bringing on labor. On the contrary, if labor does come on the case at once assumes a more serious aspect, and so the indication is to do all in our power to prevent the advent of labor. It may be said that, inasmuch as the strain of labor brings on the convulsions, if the labor can be concluded the exciting cause of the eclampsia will be removed. This is unquestionably true. But the acceleration of labor adds immeasurably to the risk, whereas its retardation will give the economy more time, with the aid of proper remedies, to put itself in a condition to safely undergo the strain of delivery.

Let us then refuse to add to the dangers of puerperal eclampsia by any operative interference that can possibly be avoided, and rely upon the drugs which in the hands of such practitioners as Fordyce Barker, Professor Charles Jewett, Professor Hirst, and my friend Dr. Love have given so excellent an account of themselves. Professor Hirst calls the use of veratrum the American plan of treatment. Let us not despise its domestic origin, but adhere to it firmly until some better, safer, and more convenient method of combating a horrible and destructive disease shall be brought forward.

Richard C. Newton, M. D.

THE LIFE-INSURANCE EXAMINER.

Minneapolis, *November 20, 1895.*

To the Editor of the New York Medical Journal:

Sir: The physician who performs the multiplicity of duties of his profession is known as a general practitioner—the family physician. Such an individual is becoming a *rara avis.* He is still found in country districts and, to a limited extent, in city practice. Wherever it is possible, however, through the close association of medical men, as in cities, the tendency is to specialization. The field of medical study is too large for any one man to cover, and the specialist is the outgrowth of this fact. We have as a result the ophthalmologist, the laryngologist, the neurologist, etc.

The man who devotes himself to any one of these specialties depends upon his brother practitioners who are not following his special line of work for his support in part. This is more especially true of the beginning of his career, for, as his reputation becomes established, there is a tendency on the part of the laity, unfortunately, to go to the specialist unadvised by the general practitioner.

The relationship between the specialist and the general practitioner is friendly and it is of particular advantage to the specialist that it should continue so. As a means of continuing such friendly relations it is generally understood that one taking up a special line of work *shall confine himself to that line of work*, renouncing all hold on general practice or other special work. As a consequence of such mutual understanding we do not expect to find the neurologist usurping the functions of the ophthalmologist *or of the general practitioner.*

This introduction brings me to the point where I may consider the relationship of the life-insurance examiner to the profession. Is he a specialist? If not, where does he belong professionally. Many of the large life-insurance companies have medical examiners who devote their entire time to the interests of the company employing them. They are, then, *specialists*. The medical director is the natural outgrowth of such specialization. Such specialization has not been carried far in life-insurance work. It would be impossible in small towns and in the country. It has not been developed in many large towns where it is quite feasible. The question of specializing the work of the insurance examiners in the larger towns and cities is a practical one that can safely be left in the hands of the representative insurance companies for solution. The insurance examiner, if not a specialist, belongs in the ranks of the general practitioner. Such ruling has been quite generally recognized in the past. There have been occasional exceptions to this rule—the outgrowth of personal friendship—in the appointment of insurance medical directors and examiners. At present a notable exception to this just rule presents itself to the profession. A specialist in one of our large cities—prominent in his specialty—has been made medical director of an insurance company. In his appointments—judging from appearances—his first appointee as medical examiner in city or town is one practising his own specialty; good men beyond question, but men who are known as *specialists*, and, as such, have no more right to accept an appointment as an insurance examiner than they have to go out and compete with the general practitioner in general practice. An appointment as medical examiner for a good life-insurance company should be worth several hundred dollars per annum. The specialist who accepts such an appointment is doing an injustice to the general practitioner, to whom he is indebted for many favors.

H. M. Bracken, M. D.

ECHINOCOCCUS DISEASE IN THE UNITED STATES.

Philadelphia, *November 29, 1895.*

To the Editor of the New York Medical Journal:

Sir: The excellent article upon Echinococcus Disease in the United States contributed to your issue of November 23, 1895, by Mr. H. O. Sommer leads me to call attention to three cases in my personal experience which the author of that paper has overlooked in his table, doubtless because no separate publication has been made of them. They are referred to in my article upon Diseases of the Liver in Sajous's *Annual of the Universal Medical Sciences*, for 1892, vol. i, c. 33. The details of one case only are there given. This was in the person of an Italian. The other cases occurred in Germans. In all the site of the cyst was the liver. All the patients were adult males. One case was observed at the Philadelphia Hospital, one at the Jefferson Medical College Hospital, and one at the Polyclinic Hospital of this city. The diagnosis was made during life in two cases by discovery of the hooklets in fluid aspirated. In the third case, that detailed in Sajous's *Annual*, the small cyst was found after death near the gall bladder, the cystic and common ducts being obstructed by gelatiniform material. My colleagues and myself were equally at fault for a diagnosis during life, and perhaps in a similar case now hydatid might be diagnosticated by exclusion. The patient was too far gone for operation when admitted to the hospital.

In this connection I beg to cite an opinion expressed in the article referred to, which Mr. Sommer's paper, I think, tends to confirm: "The opinion that hydatid disease is rare in the United States will have to be revised, although in this connection the nativity of the patients remains to be carefully studied. A number of cases have from time to time found entrance into literature, and doubtless there are some recognized but not recorded and many unrecognized."

Solomon Solis-Cohen, M. D.

ADVERTISEMENTS IN THE GUISE OF PERIODICALS.

Loyal, Wis., *November 27, 1895.*

To the Editor of the New York Medical Journal:

Sir: Can nothing be done to stop the improper and disgusting advertisement of nostrums in the secular and medical press? I am not calling attention to the patent medicines, but to a particular class of frauds, which are nowise what they purport to be. The following explains itself and needs no comment:

"Loyal, Wis., *November 26, 1895.*

"*First Assistant Postmaster General, Washington, D. C.*

"Dear Sir: Am not certain that you are the proper person to address regarding the following matter, but hope that this little complaint will find the right person. Your attention is respectfully called to . . . ., a copy of which I take the liberty to forward you. This advertising sheet (it is nothing else from beginning to end but an advertisement of a lot of nostrums) is sent out as second-class matter, contrary, I apprehend, to post-office regulations and rules.

"This sheet has been sent me more or less regularly for the past eight years without a single demand for payment of subscription; I need hardly add that it as regularly finds its place into the waste-basket. My experience can no doubt be duplicated by thousands of physicians.

"Very respectfully, A. F. Fuchs."

These nostrums, to a certain set of which the sheet in question calls attention, are a bane of our profession, and should not be allowed to masquerade in the garb of science.

Albert F. Fuchs, M. D.

Proceedings of Societies.

SOCIETY OF THE ALUMNI OF CHARITY HOSPITAL.

Meeting of November 13, 1895.

The President, Dr. Adolph Rupp, in the Chair.

Cases of Sepsis following Confinement.—Dr. Brooks H. Wells gave in detail the histories of two cases of fatal sepsis after confinement which he had recently seen in consultation.

In the first case the temperature was only slightly elevated for nearly two weeks after labor, but then suddenly began to run very high, reaching over 107° F. When he saw the patient she was profoundly septic. Vaginal examination revealed a large subinvoluted uterus and a slightly thickened broad ligament, most marked on the right side. The abdomen was distended and there was pseudo-ileus, which had existed for nearly a week. There was no pain or tenderness complained of. An incision was made into the base of the broad ligament through the right vaginal fornix and a small amount of pus evacuated. The patient died forty-eight hours afterward. The autopsy showed the tissues of the uterus and broad ligaments to be generally infiltrated with pus. The Fallopian tubes were normal.

In the second case the woman had been delivered a week before by a midwife. Septic symptoms had speedily set in, and she was in such a low condition when seen by the speaker that he hesitated in advising operative interference. However, as she had a sharply defined mass in the abdomen, just above the middle of Poupart's ligament, which he thought contained pus, an incision was made over it, and the mass, which proved to be an ovarian abscess, was easily removed. There were no adhesions. The tube was normal and there was no visible sign of peritonitis. As in the first case, the tissues between the folds of the broad ligament were diffusely infiltrated with pus. Gauze drains were introduced and the patient was returned to bed. She rallied for a time, but died the next day. An autopsy was refused.

The two cases, said the speaker, were instructive instances of a most virulent form of puerperal sepsis, and showed clearly that it was not always necessary for the Falloppian tubes to be first invaded, but that the infection could and did enter directly through the lymphatics of the cervix and the base of the broad ligament. In the second case it was doubtful whether any treatment, even the most radical, could have saved the patient after the third day, when she showed severe systemic poisoning. In the first case prompt treatment might have prevented any serious result.

Double Pyosalpinx.—Dr. Wells also showed the uterus and appendages removed by abdominal hysterectomy from a woman delivered eight months before by a midwife. The operation revealed double pyosalpinx and many collections of pus between the coils of adherent intestine. These were all opened and a gauze drain was carried through from the abdomen to the vagina. The patient recovered.

Papillomatous Cyst.—Dr. Ralph Waldo presented a tumor taken from a woman who had never been well since the birth of a child six years ago. She had a pain in the right side, then a bunch appeared, and it became larger during the menstrual flow. When first seen by the speaker she had a distended abdomen; the intestines were full of gas. Her pulse was 130 when the operation began, and it was necessary to use nitrite of amyl, digitalis, and whisky. The stitches were taken out of the abdominal wound on the eighth day. The shock after the operation was marked. At that time the patient was pulseless. She was freely transfused, the pulse came back, and she recovered.

Tuberculous Lung and Spleen.—Dr. W. L. Stowell presented the lung and spleen taken from a negro child a year old. They were filled with miliary tubercles. When the child was first seen it had symptoms of malarial disease, a high temperature—103° to 105° F. on alternate days—and the spleen was slightly enlarged. The plasmodium was found in the blood. The speaker gave quinine and the temperature went down. Subsequently the child had an attack of broncho-pneumonia, and the temperature, ranging from 101° to 102°, was not affected by quinine. In six weeks the child died. On examination, every organ of the body was found filled with tubercles. The speaker reported the case as interesting, as it had been stated that tuberculosis was not common among the negroes, also on account of the high temperature during the malarial fever and of the lower temperature during tuberculosis, and, moreover, because the tuberculosis had followed so soon after the malarial fever.

Congenital Malformations.—Dr. Charles J. Proben presented a dead fœtus of pathological interest. The foot showed an absence of the four smaller toes, with the corresponding metatarsal bones, and a few tarsal bones. In its place there was a mass of connective tissue, rather flabby. On the side of the outer ankle projected a small piece of skin about an eighth of an inch long, attached by a small pedicle. There was also an imperforate anus, the rectum emptying into the bladder, which contained meconium and had a normal urethral attachment. A sæptum about an inch and a half thick occupied the site where the anus should be; it was entirely composed of connective tissue, hard and firm. No dimple or depression was visible externally, or anything to indicate that Nature had attempted to provide for an external opening.

Carcinoma of the Body of the Uterus.—Dr. George H. Mallett presented a uterus that he had removed on the Saturday previous. It presented a carcinoma of the body. The patient was a woman of forty-five years, who had considered herself perfectly well until two weeks before the speaker saw her. The first symptoms that attracted her attention were a hæmorrhage and severe pain following coitus. These symptoms had continued to a greater or lesser degree up to the time of the operation. Upon examination, the cervix seemed absolutely normal. The uterine cavity measured three inches and a half. The curette was introduced and the findings were examined. The uterus was removed by the vagina, by the method used by Jacobs. The clamps, six in number, were removed at the end of seventy-two hours. The uterine body was so soft and friable that it was removed with difficulty. The patient made a speedy and uneventful recovery from the operation. Her menstruation was regular and the discharge she did not consider sufficient to necessitate medical attention. The specimen was of interest, said the speaker, as showing the remarkable progress made by the disease before any symptoms appeared.

Dr. D. E. Walker thought the case presented by Dr. Wells emphasized the importance of temperature after childbirth and miscarriage. He thought physicians who did not make a specialty of obstetrics or gynæcology were apt to disregard slight rises of temperature in such cases. He spoke of a case where the confinement had been rapid, there had been some little difficulty about the afterbirth, but it had apparently all come away perfectly. Afterward the patient had a temperature of from 100° to 101° F., taken by the mouth, but the pulse became alarmingly rapid and the temperature was taken by the vagina and found to be 105°. The uterus was curetted and a small piece of afterbirth was found, but the patient died. Any rise of temperature after confinement, abortion, or miscarriage should be looked into carefully, as early attention and treatment would avoid much trouble afterward.

Dr. P. E. Tiemann said that, while practising in Washington Heights several years ago, he had sometimes observed a post-partum rise of temperature which he was forced to believe was malarial, as he had observed antiseptic precautions during the management of the labor. Not infrequently these patients would have a marked rigor followed by a decided rise in temperature, which, however, readily yielded to treatment by means of a cathartic followed by quinine. Intermittent and remittent fevers were not uncommon in this locality.

Dr. Ralph H. Pomeroy, as an instance of fever in the puerperium not of pelvic origin, referred to a case recently under his observation in which a high temperature following labor had been correctly ascribed to an attack of acute amygdalitis.

Dr. Charles R. Parke said that in his practice in Scranton it was the exception instead of the rule for a confinement to be followed by absolutely no rise of temperature. None of the cases had, however, proved fatal, and there had been no sepsis. Some of the rises of temperature might be caused by malarial poisoning, but, whatever the cause, he had come to look upon a slight rise of temperature on the first or second day as a normal condition and as a cause of no anxiety.

Dr. WALDO stated that he had had cases where there had been mild sepsis, slight induration, perhaps quite extensive induration, that had ended in recovery without an operation. Within the last two years he had forty cases, and, in these, pelvic abscess had developed in nine, and two of the patients had died. He had seen two or three other cases in consultation, but there had been decided systemic infection. If the speaker found pus, he believed in operating. He thought vaginal hysterectomy better than abdominal operations, because the wound could be drained freely through the vagina, while in abdominal operations the tendency was to close the wound up.

Dr. STOWELL thought that a rise of temperature after childbirth was very important and often resulted from laceration of the perinæum.

Dr. R. C. NEWTON thought the question of temperature an interesting one, and that many cases of sepsis were called malarial.

Dr. MALLETT said that in the treatment of puerperal septicæmia the profession seemed to be divided. One set of men believed in early hysterectomy, while others condemned all local treatment, especially the use of the curette, because they believed that this instrument destroyed a granular layer of cells situated just below the endometrium the function of which was to prevent the absorption of septic matter from the uterine cavity. He thought the early use of the uterine douche and curette the better practice.

Dr. WELLS said he had come to believe that if there was a rise of temperature after labor in a healthy puerpera and the surroundings of the patient were good, it was due to some fault in technics. In the three cases presented, in which the tubes had remained normal, the infection had entered through the lymphatics from cervical wounds or through wounds of the upper part of the vagina. Some surgeons and gynæcologists advocated radical measures in these cases, while others did nothing. In regard to papillomatous cysts, if the cysts were not ruptured beforehand, and none of the fluid escaped into the peritoneal cavity, the patient would probably not suffer from a recurrence.

Dr. POMEROY said that an elevation of temperature after confinement was a matter for close investigation, and if after twenty-four hours it could not be definitely ascribed to an intercurrent affection, the case should be considered as one of puerperal sepsis even in the absence of distinct localized symptoms. He stated that the maternity wards of the Kings County Hospital, where he attended, were in the general hospital building and could not be completely isolated. There was a traditional impression among the hospital internes that cases of fever following labor were not unfrequently due to malaria—a common disorder in that section of Brooklyn. Dr. Pomeroy had observed, however, that a period of exemption from these so-called "malarial fevers" appeared to follow a thorough disinfection and renovation of the lying-in wards.

Dr. PROBEN thought it important to take the temperature before as well as after delivery, in order to have a guide as to a slight rise. Generally speaking, in the worst cases of sepsis the patients had a high temperature, although in some of them there was a low temperature. Physicians of New York were more inclined, and justly so, to attribute an elevated temperature to septic absorption than to malarial infection. Toxæmia from coprostasis was a cause of a slight rise in the beginning, and should be eliminated before pronouncing a case septic. A lacerated perinæum, any laceration in the genital tract, the character of the lochia, an examination of the uterus and appendages, an examination of the lungs, etc., should all help us to arrive at a definite conclusion. In regard to Dr. Stowell's case, he thought it showed the importance in such cases of examining the blood for the plasmodium and arriving at a diagnosis, which was of importance not alone for the present, but for the future. He quite agreed with Dr. Stowell, and had made the statement before, that persons affected with paludal poisoning were debilitated subjects in danger of tuberculosis at some later date. In fact, it was frequently difficult to decide whether a patient had one or the other disease, and resort to a blood examination was absolutely necessary.

Dr. S. KOHN thought the possibility of the existence of sepsis without a change in the lochia, or without any discharge whatever, very important to remember. He spoke of a case of his where the woman was three weeks behind in her menstrual period, and introduced a catheter to bring it on. She had a chill, high temperature, 104·5°, the respirations were from 48 to 50 a minute, the pulse was 150, and there was no discharge, bloody or other. She said nothing about her monthly period having been suppressed, and the speaker thought it a case of pleuro-pneumonia; she had a dry, hacking cough. On the following day she showed all the signs of collapse; the respirations were from 50 to 60 a minute, the pulse was very rapid, and perspiration was profuse. She then told about introducing the catheter and allowing it to remain for two hours, thus producing a pure infection with the eyed instrument, which had never been disinfected. The speaker brought an assistant, curretted her, and removed a quantity of decomposed membrane. The temperature went down to 99°, and the woman gained in strength rapidly and made an excellent recovery.

The PRESIDENT said that a rise in temperature in lying-in or puerperal women had in itself little significance unless it was associated with other pathological phenomena. He spoke of an epidemic of puerperal fever during his time of service at Charity Hospital, and remarked that in those days operations, as they are performed and discussed nowadays, were hardly suggested. The vagina was douched and sometimes the womb. The autopsies in cases of puerperal fever at that time demonstrated the inefficiency of the treatment that had been applied. About a year later the temperatures of the puerperal women went up to 105° in some and became elevated in all of them. Another epidemic of puerperal fever was apprehended, but inquiries as to the possible causes of the "fever" led to the discovery that the patients had been dining on pork and beans. A liberal dose of castor oil all around dispelled the fever.

Concerning Bedsores.—The PRESIDENT, in a paper on this subject, stated that bedsores were important and interesting on account of their origin and subsequent development. This interest was heightened by the question, To what extent can the surgeon or physician be held accountable for their origin and development? Bedsores aggravate the diseases which they complicate, and expose the patient to a new series of possible septic complications.

As regarded the ætiology, some defined bedsores as a form of ulcer; clinically, the physician was obliged to treat, not a bedsore, but bedsores. They developed under influences peculiar to the disease which they complicated, and besides were influenced by the other complications. Some persons were more prone to them than others under apparently like conditions. Bedsores might develop from an abrasion or a papule; or a bluish or reddish patch might go on to a gangrenous sloughing mass, which might possibly eventually extend down to the bone and involve that. They varied in degree, in severity, and in character according to the individual nature of the patient and the diseases which they complicated. A bedsore was not an isolated entity or a simple sore. It was pathogenetically more or less intimately related to the pathogenesis and pathological processes and progress of the diseases which it complicated. These considerations were sometimes ignored and often not sufficiently taken into account by some text-book writers. On the other hand, to say that purely local conditions, like pressure, moisture, and uncleanliness, were frequently too much magnified was not saying that pressure and uncleanliness were not of great clinical importance. Exclusive or one-sided pathological teaching could result in only incorrect or exaggerated therapeutical expectations, which might perchance expose the practitioner and the art of medicine to the unfair criticisms of people who were ever ready to expect much, and who were not capable of judging correctly in these matters, especially when the data and concepts authoritatively furnished were defective or fallacious.

The internal treatment of bedsores was subsidiary to that of the disease which they complicated. The urine might for a time, and as occasion demanded, be kept neutral or acid with tannic acid or boric acid. The bowels might be relieved by enemata to avoid the disagreeable diarrhœa which often followed the obstipation of bedridden patients. The medicaments which were applied externally usually contained alcohol as a base, and often some bactericide besides. All of us probably had our particular formulas. Whisky and alum had been recommended by Pepper, and two grains of bichloride of mercury to an ounce of spirit of wine by Erichssen. All such local applications tended to harden the skin. Lint, cotton, oakum, and pillows (horsehair) might be used in relieving pressure when a water bed or air pillows could not be obtained. The best of all means for relieving pressure was a water bed. When the skin had become broken and the sore was of an inflammatory or gangrenous type, antiseptic treatment must be applied. Surgical cleanliness must be the rule. Some gangrenous sores could not be healed, but tissues could be prevented from becoming putrescent by means of antiseptics. A simple inflammatory bedsore was always easily healed; but a sloughing, gangrenous bedsore, due to acute inflammatory disorganization of the brain or spinal cord, was often incurable. In some cases of sloughing bedsores, where the application of a poultice became necessary to hasten the separation of the slough, it had been found that a simple flaxseed poultice did better than a so-called chlorinated one, giving less pain or discomfort, and acting quicker as a resolvent.

Dr. Stowell suggested for the treatment of bedsores a stearate of zinc, as being very good for the skin. He also indorsed the advantages of the water bed in chronic cases.

Dr. Newton stated that alternate hot and ice-cold poultices were recommended by Professor Keen, of Philadelphia, as very beneficial in the treatment of bedsores.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Seventeenth Annual Congress, held at Rochester, N. Y., Monday, Tuesday, and Wednesday, June 17, 18, and 19, 1895.

The President, Dr. John O. Roe, of Rochester, in the Chair.

(*Continued from page 662.*)

Necrosis of the Middle Turbinate. Congenital Osseous Stenosis of the Naris.—Dr. A. B. Thrasher, of Cincinnati, read a paper on each of these subjects. (See pages 708 and 750.)

Dr. S. W. Langmaid, of Boston, said, regarding the last case, that it had been his good fortune to see four such cases. Three of them were known to be congenital. In one of them both nares had been obstructed, probably by bony growths. Both nares were punched through and afterward dilated, and both had remained patent when seen two years or more afterward. Many of these cases, however, had been operated upon quite unsuccessfully. In one of the cases referred to, from the fact that the nose had not been used functionally, it had never attained its full growth, and hence, even though the nostril had been opened, respiration was imperfect. Within the past year he had seen a baby of six months in whom there had appeared to be stenosis. The operation had been postponed for a few months on account of the age of the child. The condition had been brought to the notice of the parents by the inability of the child to nurse. He had also seen a boy of fourteen years suffering from this condition. It seemed rather strange that he should have seen so many of these cases in a comparatively short time. In the case of the young girl upon whom he had operated the plate had not been bony, but had seemed to be composed of bone and fibrous tissue, and to extend backward about two thirds of the distance.

Dr. Ingals said that, although he had not observed positively congenital atresia, he had seen many cases in which there was partial closure of the posterior nares. This condition, he believed, was often overlooked. In performing the operation for adenoid growths it had been his habit for some years to pass a forceps through both nares before the child came from under the anæsthetic. In quite a large number of cases he had found much narrowing of the posterior nares and in some almost complete closure. Two years ago he had operated upon a little child that had been previously subjected by other physicians to three operations for adenoid growths. The child had not been improved under these operations because these physicians had failed to discover and relieve the obstruction of the posterior nares. It was usually easy to accomplish this with a nasal bone forceps having a smooth and rounded end. By passing this forceps through and separating the handles, dilatation was readily effected.

The Relation of Vaso-motor Disturbance to Diseases of the Upper Air-tract.—Dr. F. H. Bosworth read a paper on this subject. (See page 655.)

Dr. William H. Daly said that the upper air-passages might well be considered the gateways of life. The nose and throat, through their apertures, the mouth and nares, were the sensitive portals through which entered the air we breathed. It was through the sensations telegraphed from these points to the sensory and vaso-motor centres in the brain that the subject was informed he was in the presence of noxious gases or offensive odors. It was in the nares that we had the alarm sounded by these silent sentries, the nerve peripheries, that there was an onset of a coming cold, whether the enemy was the pollen of plants or other irritating dust, or the sudden change of atmospheric temperature or moisture.

Even if the body surface had first been attacked, here the premonitory tickling and sneeze made us aware of coming danger, and we closed the window, got in out of the draught, drew near the fire, or donned our robes. It was all the same, the premonitory warning most heeded and feared was that which came to our senses through the nose. So possibly the common English expression, "paying through the nose," might be based upon the common liabilities to be met in discomfort and physical suffering, the first mortgages of which were recorded and made a permanent lien upon our physical property from the moment we ignored the notice given us by our first sternutatorial act.

There were too many incontrovertible facts connected with both vaso-motor disturbances and their basic cause in the respiratory tract to give rise to doubt that they were not pre-eminently worthy of our consideration; they justly gave us much substantial though difficult grounds for investigation. And while in doing this we might sometimes appear to "thrash over old straw," yet in the thrashing of it we should find more than mere chaff for our pains; we should here and there find a grain of sound scientific pathological truth that, properly cultivated, would yield a harvest full of ripe and rich substance for the benefit of the health of humanity.

In these days of *fin-de-siècle* medicine the most striking and valuable advances were incontestably being made in the smaller details and the specially limited fields of our art and science. We therefore from the present standpoint believed we had much justification in making our business the subtle malfunctions of the nasal organ, which had popularly so often been accused of putting itself into every sort of business not strictly and normally its own, and in this possibly popular animadversion had not been altogether wrong.

At all events, there were some non-æsthetic figures and functions of the nose that had always, to his mind, needed reforming, and he had therefore made it much of his business of life to do what his limited ability permitted in that direction, and he had had no little satisfaction (and as well sometimes alarm from the ill-advised work of enthusiasts) in knowing that the school of intranasal medicine and surgery in America was a school which he had had much to do with founding and forming. This was a fact scarcely doubted by the men who had been working in the field from the first appearance of his earlier papers on affections of the nose, as previously to the appearance of those essays most of the literature had been that of laryngologists, and on subjects pertaining to laryngology.

It was worth while to note the foregoing, since we had springing up otherwise bright men now and then who seemed yet to have not heard of so minor a matter as the speaker's teachings to the profession in 1882[*] and subsequently concerning nasal neuroses, especially relating to hay fever.

True, Voltolini's and Porter's cases had appeared previously on a kindred subject, but their teachings had been sleeping in the tomb of the Capulets. And in so great a city as London in 1878, with its eminent teachers Mackenzie and Browne, men had scarcely been making an intra-rhinoscopic examination. And he knew he should be pardoned for any apparent self-satisfaction he might express, that to be supported by such men in America as Bosworth, Roe, Ingals, Mackenzie, and hundreds of others, and in Europe by innumerable hosts, and to find the practice he had inculcated in 1882 to be now the advanced and well-tried and efficient practice of the scientific medical world, was calculated to afford him much pleasure and satisfaction.

But to recur more specifically to the discussion in hand—The Relation of Vaso-motor Disturbances to Nasal Disease—we were taking up a question that was apparently, if not really, present as a factor in a large part of nearly all the conditions of the nasal interiors we had to deal with, as well as some we had little or nothing to do with.

The act of blushing was, in fact, a sudden shock to the vaso-inhibitory function of the vaso-motor nerves; and the dreaded red nose of innocent puberty and adolescence, as well as that induced by the alcoholic industries, might or might not be a local partial paralysis or the reflection of a remote irritation.

In fact, every act or change in the motility of the non-striped muscles of the arterial system, of the nares especially, constituted a disturbance, and we therefore should have (in his opinion) had for the title of the discussion to-day "the relation of *abnormal* vaso-motor disturbances to diseases of the upper air-tract"; but it was and ought to be understood that we were dealing for the chief part with the pathological conditions of the parts, and not with normal functions or disturbances.

He had for years been cognizant of the fact that abnormal vaso-motor disturbances and other diseased and abnormal conditions were in themselves both cause and effect. On the one hand, vaso-motor abnormities might in a given instance be primarily the cause of and inductive of local structural disease, as in another case a structural abnormity might be a primary cause producing a local vaso-motor malcondition that would react and cause suffering from such abnormal function, intensified by the local lesions which gave rise to it—either from excess of inhibition of vaso-motor function causing, for example, on the one hand, atrophic disease of the mucous membrane, or *per contra* a partial local paralysis of the vaso-inhibitory function, allowing too much blood to become static in certain localities and deposit its nutrient material as sediment was deposited in the eddies and sluggish portions of streams; we had in this event as a result hypertrophies, various hyperplasiæ, or, what was also common, a baggy, boggy local condition so often seen, especially in the nares, the temporary disappearance of which was so prompt and striking upon the local action of cocaine used previous to the various operative procedure which we resorted to within the nares.

There was yet another condition well illustrated by Dr. W. C. Glasgow,[*] of St. Louis, wherein the cavernous bodies of the nasal mucous membrane became infiltrated with escaping white corpuscles and liquor sanguinis. This condition we had all seen often in practice—viz., pallid mucous membrane, leaking sero-mucus, and blocking up of the nares with its pale flaccid sacs, especially when the patient was in the recumbent posture. The speaker had repeatedly found this condition as a concomitant of general neurasthenia, and whether, as Glasgow had said, it was due to a state of spasm of the minute vessels supplying the arteries through nerve irritation or not, it remained apparently that there was a recurrent congestion nevertheless either of normal blood or of some of its normal constituents separated from it.

There was also an alteration in the tone and form of the tissues besides an abnormal vaso-motor disturbance, which was a *sine qua non.* And this condition might be considered one of the local pareses of motility with as much reason as Glasgow considered it due to an increased tone of the vessels caused by an augmented action of the vaso-constrictors.

Dr. S. Weir Mitchell had aptly put it that the brain and nervous system, and, the speaker might add, especially the organic nervous system, under stress, might be likened to a thoroughbred horse which, being most highly strung, was apt to be unduly active, and in response to the spur and whip to display an apparent activity which was really the expression of past or present exhaustion.

And Dr. Roe, our president, had epitomized the question tersely[†] in saying: "In many cases the nose is the objective cause, and in many cases, no doubt, the subjective cause," and cited an illustrative case of a man who had consulted him for suspected pulmonary disease, complaining of pain in his chest. A careful investigation had revealed sound lungs, but in the nares there had been found an inflammatory condition with exostoses, a cure of which had relieved the pulmonary pain promptly.

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[*] Hay Asthma and Nasopharyngeal Catarrh. *Archives of Laryngology*, vol. iii, No. 2, April 1882.

[*] Vaso-motor Disturbance of the Nasal Membrane. *Transactions of the American Laryngological Association*, 1885.

[†] *Transactions of the American Laryngological Association*, p. 30, 1885.

The conditions of the nose due to reflex irritations and *vice versa* were more far-reaching than those of the air-passages, and if the instances of hay asthma and catarrhal and spasmodic asthma were left out of the question, nevertheless, clinical history had so rapidly grown upon the sure foundations laid for it in intranasal medicine and surgery as to make it impossible for us to ignore the facts given us, even allowing a large margin for enthusiasm, a sentiment he had never indulged in on this question.

He referred to neuralgias, digestive disorders, etc., that had been incurable until the interior of the nose had been put into a healthy and normal condition.

But, as this discussion was limited to the air-tract, he did not feel permitted here to give cases in his possession that afforded illustrative proof of the reflex irritative effect of intranasal disease upon other structures and organs of the body than the respiratory tract.

I might here be permitted to say that he had never had any reason to retract what he had hoped years ago for the treatment of hay fever and forms of catarrhal and spasmodic asthma by surgical procedures. His statistics had rarely fallen below sixty-three per cent. of cures in catarrhal and hay asthma, and about forty per cent. in spasmodic asthma, and one of the most successful practitioners in this, or for that matter in any country, scarcely ever failed in making cures, except when he was unable to get the consent of the patient to submit to a correction of intranasal deformities and abnormities present, and a local cure of the constantly concomitant rhinitis and other pathological conditions.

Vaso-motor disturbances were the essence of all conditions in one form, manifestation, or another of diseases of the upper air-tract, and indeed it was in the mechanism of asthma in its varied forms that normal vaso-motility was most severely put to the test.

He had recently met a prominent medical man of Baltimore, who had had his last and recent attack of hay fever entirely limited to the tissues of the palpebra, and the case had exhibited a condition of disturbance of the local vaso-motor system almost exclusively.

In the beginning vaso-motor disturbances were always of an irritative nature, and later on, when the paths for the transmission of motor impulses became involved, paresis or complete paralysis of the blood-vessels might ensue, or the case might continue in the local irritative stage for years, and be combined with sensory disturbances—such as formication, anæsthesia, neuralgia, or a sense of stuffing in the nares when there was really a fair and sufficient lumen.

These were conditions that from long observation had become to him familiar figures in the functional pathology of the nares, and he had no doubt also had been repeatedly subjects of observation on the part of his esteemed colleagues, who had done him the honor to listen to this, on his part, necessarily brief discussion.

And now, finally, to sum up his opinion:

a. Abnormal disturbances of the vaso-motor function, or disease of the upper respiratory tract, might either, one or the other, be primary or secondary.

b. Both, when established, might be coactive and progressive.

c. The surest and quickest cures were those in which surgical interference found a proper election.

Dr. MULHALL said that the nose presented two distinct clinical pictures of vaso-motor rhinitis: one, in which the membrane was pallid and weeping, and the other, in which the mucous membrane was succulent, soft, red, and hyperæmic. We need not always look to the nose for a cause of these vaso-motor disturbances. In an article published some time ago on Diet and Exercise in the Cure of Chronic Inflammation in any Portion of the Body, he had given the following instructive example: A policeman had come to him with the pallid form of vaso-motor rhinitis. He would wet from five to eight handkerchiefs a day with the fluid from the mucous membrane of the nose. The true cause of the condition had not been discovered, and hence treatment had not relieved him. Inquiry had shown that the man had been a mounted policeman for many years, but had recently been transferred to clerical duty in a hot station-house. He was at this time about fifty years of age. One would expect that the abandonment of horseback-riding which had been carried on for so many years would result disastrously to his general health. He was restored to the mounted force, and within a month all of the disagreeable symptoms had disappeared without any treatment of the nose whatever. He had known some of these cases to last for years, and to be characterized by the discharge of pure serum from the nose and by sneezing, without any organic disease of the nose. In most of the cases he had secured a practical cure by various measures. These measures were, cold frictions with a wet towel every morning; the application of a mild electrical current to the nape of the neck, and the administration of one one-hundred-and-twentieth of a grain of atropine on an empty stomach every morning, and of one drop of Fowler's solution after each meal. Under this treatment he had made these patients comparatively comfortable.

Dr. W. K. SIMPSON, of New York, said that, though there were undoubted conditions due to nasal reflex, he thought there was a tendency to carry the subject too far, and the longer he studied the cases of so-called reflex troubles he was more convinced that in these cases we should examine carefully for direct lesions of the organ chiefly disturbed. He cited two examples: One a marked case of asthma in a patient whose nose was filled with nasal polypi, the removal of which did not influence the asthma. Further examination revealed chronic Bright's disease, of which she died, retaining the asthma until her death. The second case was one of marked aphonia, with symptoms of intense throat and ear irritation of the left side. Examination of the ear revealed the canal to be filled with a foreign body (a June bug) which had lodged in the ear while the patient was asleep on the grass. Removal of the foreign body relieved the irritation of the throat and aphonia for a while, but the aphonia subsequently returned, when examination showed paresis of left vocal cord and aortic aneurysm, of which patient died. The foreign body in this instance, instead of being a reflex cause, was merely a coincidence, and in both cases the symptoms were far deeper than reflex.

Dr. H. L. SWAIN said that he had been greatly interested in these vaso-motor disturbances, owing to a study that he had made of cases occurring in his own practice. Dr. Bosworth, in his book, had tabulated the cases of asthma that he had been able to cure by intranasal treatment. This had led him to search through his own case books and determine the percentage of cures in his own practice. The result of this search had been that the percentage tallied very closely with Dr. Bosworth's second list. While he agreed with Dr. Simpson in much that he had said, there were certainly many cases where the patients were strikingly benefited by the removal of intranasal disease. We were, however, confronted with the fact that certain elements were always necessary to produce asthma in any individual—a diseased condition of the nose, an irritability of the bronchial tubes, an irritation which came to the nose, like pollen in hay fever, or the cold which produced swelling in the nose, and lastly, the neurotic habit producing vaso-motor irritability, which would connect the nose and bronchi.

We must always admit this last element, but there were other systemic causes which might act as excitants. He had had a case similar to the one reported by Dr. Simpson, in which Bright's disease had been the underlying condition; but in this case he had found that the better the condition of the nose, the less did the patient suffer from the asthma, irrespective of the condition of the kidneys. Three or four years ago he had reported a series of cures, and a recent examination had shown that only three or four of these cases had relapsed. While therefore admitting that there might be a revulsion of feeling regarding reflex disturbances, he still felt that many cases of asthma would be relieved by treatment of the nose. He had been interested in the report of Dr. Mulhall's case, for the treatment had been almost the same as he had independently employed in his own cases.

Dr. Shurly said that generalization on phenomena belonging only to a portion of the human body did not constitute good philosophy. If all cases of asthma, for example, were viewed from the standpoint of the general practitioner, one would be surprised to find how many of them did not exhibit any obvious structural changes in the nose. There were two kinds of vaso-motor phenomena, he thought—one which was transient, and one in which structural change followed from the frequency with which the vasomotor perturbation occurred. The latter class of cases was certainly greatly benefited by operative procedures upon the part structurally affected. But the other class could not be improved by any such treatment. At one time he had made a series of experiments on dogs, and had found that irritation of the spheno-palatine ganglion produced all the phenomena of asthma in some dogs but not in all, and that irritation of the mucous membrane of the trachea always gave rise to a condition like spasmodic asthma. If this spasmodic asthma continued for a certain length of time, as every one knew, it would give rise to pulmonary emphysema, and again as a result of habit it would leave a tendency for paroxysms of asthma to recur. He thought we should all be grateful to Dr. Daly for bringing the practice of burning the nasal membrane to the notice of the profession, for it was certainly very useful in a minority of cases—*i. e.*, in those cases in which abnormities of the nasal chambers could be detected.

Dr. Lowman said that in all conditions of this kind the constitutional state of the individual, particularly of the nervous system, was an important factor. The pathological lesion would not always be found where one would expect to find it from the symptoms. Thus, in a case of neuritis with spasm of the hand, under Dr. Starr's care, the cause of the neuritis had been found to be a small knot of black silk which had been used in suturing a cut in the wrist. So he thought that in these diseases under discussion the pathological state might be quite insignificant and yet the symptoms be very marked. He recalled a case of polypi in a man suffering from asthma. The polypi were removed, but the asthma was not at all improved. The physical examination of the lungs showed some pulmonary emphysema, and the examination of the sputum revealed tubercle bacilli. In this case, therefore, the tuberculosis was the true cause, and the polypi acted as an additional exciting cause.

Dr. Daly said that in his article of thirteen years ago he believed he had raised the question as to "whether we were warranted in considering any case of asthma purely a neurosis without having first examined and rectified any disease found in the nose or pharynx." This predicate had been the foundation upon which all this broad therapeutic practice had been built. This practice had grown in the face of the utmost incredulity at first, but had now been accepted in all parts of the medical world. Many of his medical acquaintances who had been apparently incredulous at first of the opinions and teachings that he had promulgated had nevertheless put those teachings into practice and not met with disappointment. He had never maintained that all cases would be benefited by this line of treatment, but that he had had sixty-three per cent. of cures in hay asthma with nasal abnormities were statistics that were entitled to consideration, since no treatment which ignored his teachings could possibly accomplish such good results.

The Cigarette Habit.—Dr. J. C. Mulhall, of St. Louis, read a paper on this subject. (See page 686.)

Dr. Ingals said it was most fortunate that such an old cigarette smoker was alive to tell this tale, and was willing to tell us in just what respect cigarette smoking was objectionable. It was well that people should understand the difference in the effect produced by smoking cigars and by smoking cigarettes. He was sorry that the author of this admirable paper should have made the grave mistake in the latter part of his paper of intimating that tobacco smoking did no harm. He thought that all the members had seen chronic pharyngitis and irritable conditions of the fauces which were apparently due to smoking. Personally, he had seen many persons whose nervous systems had been seriously affected by indulgence in tobacco. The author had stated that the local effect was slight, and this was probably true in the majority of cases but not in the large minority.

Dr. Carl Seiler said that Dr. Ingals spoke without experience as a smoker, and hence he could hardly enlighten us much on this subject. The speaker said he was himself a smoker, and he had never seen a case in which any local effect had been produced by smoking, except in those American smokers who did not know how to smoke, and who were continually expectorating, thus producing an abnormal dryness of the pharyngeal mucous membrane. The smoke of a cigar or pipe, if not inhaled, remained in the mouth, a part which was covered with tessellated epithelium, and not with columnar epithelium.

Dr. Daly said that he had begun smoking when he was about seven or eight years of age, and had smoked ever since then, for the most part, temperately. He had always experienced a sense of great depression, except when he had smoked after taking some stimulant or a hearty meal.

Dr. Langmaid said that he had understood the reader of the paper to say that there was but little irritation of the pharynx and larynx as a result of cigarette smoking. He recalled a stalwart Irishman whom he had seen in his office. An examination of the throat had led him, in spite of the man's nationality, to express the opinion that the patient was not a smoker, and the man had admitted that such was the case. He had known this by the coloring of the mucous membrane of the pharynx and larynx. If this observation had been correct, and not simply a shrewd guess, it was evident that there was a decided local effect upon the mucous membrane. He thought that all would admit that the female throat was ordinarily less hyperæmic than the male throat—

at any rate, this was particularly noticeable in singers. During the past winter he had had occasion to treat a physician with a very irritable throat. While the associated mental disturbance and other symptoms were not to be attributed to the use of tobacco, he had been forced to the conclusion, as the patient also had been, that the smoking was responsible for most of the trouble. He could invariably tell from an examination of that man's throat when he had refrained from smoking for a few days.

From a large personal experience in the treatment of prominent singers, he had found that smoking exercised a potent influence on the voice. In his own case, he had learned that, in order to be in good voice, he must not smoke during the day if he was to sing that evening. Because one prominent singer could smoke and sing, this was no argument that others could do so. The best singers of to-day underwent a great deal of fatigue. He had in mind one singer with a magnificent voice, in whom he felt sure he could detect the effect of cigarette smoking. He had known another singer, an inveterate smoker, who had found it necessary to abstain as long as three weeks at a time from smoking, in order that he might be at his best for some great effort in singing. He would say that the bad effect on the pharyngeal mucous membrane was much less from cigarette smoking than from pipe smoking, for the reason that the smoke was not so hot. What he objected to in cigarette smoking was its destructive effect upon consecutive thought. The cigar smoker did not want to be narcotized; the cigarette smoker did want this.

Dr. Simpson related his personal experience with regard to smoking and its local effect upon the singing voice. The reader of the paper had spoken very pertinently when he had said that it was in the allied conditions that the local effect of smoking was increased. At one time he had given up smoking absolutely for eight years, and passed through what seemed to be similar to the experience of the opium smoker in his attempt to give up his habit. During this period when he was not smoking, his throat had been free from any discharge or uncomfortable sensation, and he had been able to use his voice with remarkable ease. After he had resumed smoking he had found it much more difficult to keep the singing voice in good order. The barytone did not suffer so much as the tenor voice did from smoking. He also felt that he could detect a smoker's throat by its appearance.

Dr. Newcomb thought there was a certain amount of habit about smoking, independently of the effect of the tobacco itself. Those who had looked into the literature of pharyngeal mycosis know that all writers alluded to the possible good effect of tobacco in that condition. He now had under his care a young Swedish woman of splendid physique, and without any bodily disturbance except a pharyngeal mycosis. She had been treated with the cautery, but without much benefit. She had then been lost sight of for a time, and on her return had been decidedly improved. She had finally admitted that during this time, on her own responsibility, she had been smoking Monopole cigarettes without inhaling the smoke. It seemed that in this case, at least, the smoking should be given a large share of the credit for her improvement.

Dr. Langmaid said that he had once tried the use of a solution of nicotine in a case of this kind, and with a most disastrous result. The application had been followed by immediate and severe syncope. He wished to warn against this, although it had been recommended.

Dr. Swain said that an interesting fact brought out by certain measurements taken in the colleges relative to the physical development of the students, had been that among tobacco smokers, as a class, there was a smaller chest expansion than among other students.

Dr. Longman remarked that this paper filled a hiatus in medical literature—*i. e.*, the description of diseases by physicians affected with them. There was altogether too little of this in our medical books. It had occurred to him during the discussion that possibly the irritation observed by Dr. Langmaid in singers might have been due to many of the slight causes well known to affect the throats of singers. Some well-known singers could not expose themselves to the air while riding—was this an argument, therefore, in favor of giving up open-air exercise?

Dr. Murray said that one of the most important features of the paper had been the serious yet truthful charge made against the cigarette that it enabled young people to acquire the tobacco habit.

Dr. Mulhall said that he admitted the truth of the observation made by Dr. Langmaid on the local effect of tobacco on the singer's throat. The tenors and sopranos, as compared with other singers, must have very perfect throats and command perfect laryngeal muscular control, and hence not only the local effect but the indirect effect on the nervous system was of importance in such individuals. Ordinarily, smoking produced only a very transient hyperæmia. He had not been so successful as Dr. Langmaid in detecting a smoker by the appearance of the throat. He had never seen pharyngeal mycosis in smokers' throats, and to this extent could confirm the statements generally made on this subject by writers. A medical friend of his, however, had told him that he had a smoker for a patient who was affected with this disease. He could not understand how tobacco smoke could reach sufficiently deep to affect the seat of this affection. He believed he had been the first to call attention to the fact that pharyngeal mycosis was a disease which would sometimes disappear spontaneously and reappear. That tobacco smoking led in a certain degree to the use of stimulants could not be denied, owing to the temporary depression produced by smoking which could be removed by alcohol; but the combined effect of alcohol and tobacco was very bad in the end.

A Cyst of the Nasopharynx and a Cyst of the Oropharynx; Fibroma Papillare, or True Papilloma of the Nasal Sæptum.—Dr. Jonathan Wright, of Brooklyn, read papers on these subjects. (See pages 705 and 747.)

Dr. H. L. Swain asked if there was any tendency for this papilloma to recur.

Dr. Wright replied that he had removed the growth last fall, and that up to the present time there had been no evidence of recurrence.

Dr. Swain said that he had during the last year made sections of a true fibroma papillare of the nose. This case was especially interesting because it had shown a strong tendency to recur in the adjacent tissues after it had been removed. Sections of recurring laryngeal papilloma and sections of this papilloma could not be distinguished if examined side by side. This papilloma had recurred in different situations at intervals of a few months, and he had finally lost sight of the patient. Another physician now had under his care a patient answering this description, and he was still removing recurrent growths from different parts of the nose.

Dr. Newcomb said that, bearing on the rarity of cysts of the nasopharynx, he desired to say that he had removed one about a week ago. The specimen was in alcohol and had not yet been examined. The growth had had a hard feel, and had been removed by the cold snare without any hæmorrhage whatever. After the removal of this mass he had found still another. This had led him at first to suppose that only a portion of the mass had been removed, but examination on the following day had shown that the snare had either slipped over one growth or else over one lobe of a single growth. The true condition had yet to be determined.

Dr. Langmaid said that he had removed a few months ago what might be called a recurrent fibro-cystic growth of the pharynx. The growth had been seized with a strong forceps and violently torn away. In a few weeks it had reappeared. About six weeks ago he had removed it for the second time. It had again recurred, and a third operation would be done soon. The microscopical examination showed that the two tumors already removed were fibro-cystic, and that the tissues were quite œdematous. It was the first cystic growth that he had ever seen in the nasopharynx. At first, on account of its great density, he had supposed he was dealing with the ordinary nasopharyngeal fibroid polyp. The growth had extensive attachment to the sæptum and the vault of the cranium, which had made it impossible to include it in a wire snare. There had been no hæmorrhage.

Dr. Wright said that he had no doubt that the papilloma in his case would recur. He had simply meant to call attention to the fact that many of these cases had not been reported. He did not doubt, however, that they were comparatively frequent, and had been overlooked. The description of Dr. Langmaid's case had at first led him to think that the growth was a fibro-sarcoma, but the absence of hæmorrhage was opposed to this view. The recurrence might have been due to a partial removal only of the cyst wall.

Book Notices.

The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By William Osler, M. D., Fellow of the Royal College of Physicians, London, and Professor of Medicine in the Johns Hopkins University, Baltimore, etc. Second Edition. New York: D. Appleton & Co., 1895. Pp. xvi–1143.

The second edition of this work differs from the first in many respects. These differences, to quote from the preface, are as follows: "In Section I the article on typhoid fever has been thoroughly revised to date, and that on malarial fever in large part rewritten. The subject of diphtheria has been completely recast, and extended from eleven to twenty pages. The article on septicæmia and pyæmia has been rearranged and largely rewritten. Short descriptions of the bubonic plague and of the foot-and-mouth disease have been added. New matter will also be found in connection with cholera, syphilis, tuberculosis, and others of the infectious diseases. In this section, in describing the stage of incubation, the report of the Clinical Society of London has been adopted.

"In Section II the articles on gout and diabetes have been extended. A description of infantile scurvy and of the hæmorrhagic diseases of the newborn has been added.

"In Section III there has been added an account of eczema of the tongue and of leukoplakia, and under chronic tonsillitis will be found additional details regarding the injurious effects of mouth breathing. The methods of clinical examination of the stomach have been omitted, since they more correctly belong to, and are more fully given in, manuals of diagnosis. The subject of appendicitis has been completely rewritten and much extended. A new section has been added on affections of the mesentery, and under diseases of the liver a description of the dislocations and deformities of the organ. Under localized peritonitis a new section will be found on the subphrenic variety.

"In Sections IV and V many minor additions and corrections and additions have been made. In writing on angina pectoris, it was a pleasure to be able to give the credit of the 'intermittent claudication' theory to that distinguished old Glasgow professor, Allan Burns.

"In Section VI the subjects of anæmia and leukæmia have been revised and rearranged. In the articles on Addison's disease and on exophthalmic goître and myxœdema will be found references to the new investigations.

"In Section VII a brief account of anuria has been added, and a number of minor corrections and additions have been made.

"In diseases of the nervous system a new introductory section has been written, with new diagrams, which will prove helpful to the student. Most of the important points which have arisen during the past three years have been incorporated.

"In Section IX the article on muscular atrophies has been rearranged.

"In Section X the important studies of Gosio and of Sanger upon arsenical poisoning have been referred to.

"In the section on parasites the subject of psorospermiasis has been recast, a short account of the parasitic infusoria has been added, and a number of minor corrections have been made."

It will thus be seen that the revision has been careful and additions have been generously made. Though, as we have before said, the *Practice* of Dr. Osler is a work of unusual excellence. it must be apparent that with the second edition it has become still more valuable. It is certainly among the best of our modern text-books upon medicine, and its usefulness is the greater because of the simplicity, clearness, and force of its style.

Geschichte der jüdischen Aerzte. Ein Beitrag zur Geschichte der Medicin. Von Dr. Richard Landau. Berlin: S. Karger, 1895. Pp. 3 to 144. [Preis, 3*M.*]

Were it not that in biblical times the Jews possessed a culture superior to their neighbors, that in the Dark Ages they carried the secrets of the healing art, and that during the hours of their sorest persecution they were, paradoxically, the body physicians of popes and kings, there would be no excuse for the existence of Dr. Landau's history of Jewish physicians. As the author himself asserts, Jewish physicians are to-day German physicians, French physicians, English physicians, and American physicians, and no longer designate themselves or care to be known as Jewish physicians. But since the author has given us a very readable work and has written it in a purely historical spirit, he may be forgiven the misdirected energy and wasted time.

The work is arranged on a geographical basis, the author describing in separate chapters the work and lines of Jewish physicians who made themselves famous in their day and time. He gives a short account of biblical medicine, and it is to be regretted that he did not consult the classical and scholarly work of Trusen. The chapter on Talmudic medicine is much too brief. The Arabic period of progressive medicine is well discussed, and in the subsequent chapters on the labors of physicians of the Jewish faith in the continental countries of Europe, Dr. Landau shows careful research and well-balanced judgment. To persons familiar with the history of medicine, there are some familiar names in the register which ends the work. Emmerich, Akiba, Avenzoar, Lachmann, Halevy, Morgenstern, Heinrich Wolff, and Zadoh are some of them known at the present day. The author has wisely refrained from making his work contemporaneous.

The book represents hard work, but is of interest only as a contribution to medical history. The author's style is free. As regards the appearance of the book, the paper is good, but the print is coarse and poorly done.

The Climates and Baths of Great Britain. Being the Report of a Committee of the Royal Medical and Chirurgical Society of London, W. M. Ord, M. D., Chairman; A. E. Garrod, M. D., Hon. Secretary. By Various Contributors. Volume I. The Climates of the South of England, and the Chief Medicinal Springs of Great Britain. London and New York: Macmillan & Co., 1895. Pp. xvi–640.

The book is most exhaustive and of the greatest scientific excellence, but necessarily it is one which will be of interest to but a small number of American readers. The volume opens with an introduction which concerns the climatology of southern England. Then follow chapters on the climates of Cornwall, Devonshire, the Channel Islands, Somerset, Dorset, Hampshire, the southeastern counties, Surrey, Sussex, and Kent. These chapters are very elaborate, geography, geology, meteorology, prevalent diseases, death-rates, and therapeutic values receiving consideration, not merely in a general way, but in particular and as they concern towns and individual localities. Written, too, as they are by men of unusual ability as observers and teachers, they are of the utmost scientific value.

The second part of the book treats of balneology, opening with a chapter on the mineral springs of Great Britain in general. Chapters on particular watering places follow, and the matter corresponds in its general arrangement with that of the first part of the book. The work throughout is replete with statistics, tables of rainfall, temperature, prevailing winds, and analyses being very numerous. The work will not interest us perhaps as practitioners, but it certainly will as students of science. It will suggest also, we think, the usefulness of a work of similar scope and value concerning climatology and balneology in the United States.

Handbook of the Diagnosis and Treatment of Skin Diseases. By Arthur Van Harlingen, Ph. B. Yale, M. D., Emeritus Professor of Dermatology in the Philadelphia Polyclinic, etc. Third Edition, enlarged and revised. With Sixty Illustrations, several of which are in Colors. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. xvi–17 to 577. [Price, $2.75.]

A period of six years of usefulness in its second edition warrants a continuance of this book in a third edition, especially in the enlarged and improved form in which it is now issued. The alphabetical plan of arrangement adopted, with the object of ready reference in view, has always been a feature which greatly facilitated the use of the book.

The present type is an improvement, being much larger than that of the former edition, and this, together with the better and thicker paper used, makes the increase in the size of the book, as regards matter, more apparent than real, though there have been added about a hundred and sixty pages, mainly in additions to articles and in articles rewritten. That on tuberculosis of the skin has been entirely rewritten and considerably lengthened. The illustrations are more numerous and on the whole better than those of the last edition, but there is still considerable room for improvement in this respect.

BOOKS, ETC., RECEIVED.

System of Surgery. Edited by Frederic S. Dennis, M. D., Professor of the Principles and Practice of Surgery, Bellevue Hospital Medical College, etc. Assisted by John S. Billings, M. D., LL. D. Edin. and Harv., D. C. L. Oxon., Deputy Surgeon-General, U. S. A. Vol. III. Surgery of the Larynx, Tongue, Jaws, Teeth, Salivary Glands, Neck, and Chest—Diseases and Surgery of the Eye and Ear—Surgical Diseases of the Skin—Surgery of the Genito-urinary System—Syphilis. Profusely Illustrated. Philadelphia: Lea Brothers & Co., 1895. Pp. 7 to 919. [Price, $6.]

Surgery. A Practical Treatise with Special Reference to Treatment. By C. W. Mansell Moulin, M. A., M. D. Oxon., Fellow of the Royal College of Surgeons, etc. Assisted by Various Writers on Special Subjects. With Six Hundred and Twenty-three Illustrations, many of which are printed in Colors, about Two Hundred having been made from Special Drawings. Third American Edition. Revised and edited by John B. Hamilton, M. D., LL. D., Professor of the Principles of Surgery and Clinical Surgery, Rush Medical College, Chicago, etc. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. xxiv–25 to 1250. [Price, $6.]

Outlines of Practical Physiology; being a Manual for the Physiological Laboratory, including Chemical and Experimental Physiology, with Reference to Practical Medicine. By William Stirling, M. D., Sc. D., Professor in Victoria University, Manchester, etc. Third Edition, revised and enlarged. With Two Hundred and Eighty-nine Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. xvi–402. [Price, $2.]

A Guide to the Practical Examination of Urine. For the Use of Physicians and Students. By James Tyson, M. D., Professor of Clinical Medicine in the University of Pennsylvania, etc. Ninth Edition, revised and corrected. With a Colored Plate and Wood Engravings. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. xii–13 to 276. [Price, $1.25.]

Catarrhal Diseases of the Respiratory Passages. By J. M. G. Carter, M. A., M. D., Sc. D., Ph. D., Professor of Preventive and Clinical Medicine in the College of Physicians and Surgeons, Chicago, etc. Chicago: E. H. Colegrove & Co., 1895. Pp. 11 to 135. [Price, $1.]

Obstetrical Pocket Phantom. By Dr. K. Shibata, Specialist in Gynæcology and Obstetrics, Tokio, Japan, etc. Preface by Professor Franz von Winckel. With Eight Illustrations, One Pelvis, and Two Jointed Manikins. Translated from the Third Edition by Ada Howard-Audenried, M. D., Physician to the Children's Clinic at the Woman's Hospital, Philadelphia. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. 21. [Price, $1.]

Transactions of the South Carolina Medical Association. Forty fifth Annual Meeting.

Proceedings of the Orleans Parish Medical Society. For 1894. Volume II.

The Johns Hopkins Hospital Reports. Report in Pathology, IV. Contents: Deciduoma Malignum, by J. Whitridge Williams, M. D.

The William Pepper Laboratory of Clinical Medicine. Address by John S. Billings, M. D., at the Opening of the Laboratory.

The Technique of Tenotomy of the Ocular Muscles. By Leartus Connor, M. D. [Reprinted from the *Journal of the American Medical Association.*]

Tendon Grafting. A New Operation for Deformities following Infantile Paralysis. By Samuel E. Milliken, M. D. [Reprinted from the *Medical Record.*]

Miscellany.

Antipyrine and Tannic Acid as a Styptic.—The following is from an article by Dr. Roswell Park, of Buffalo, which appeared in the *Medical News* for November 16th: "In the *Medical News* of December 15 and 22, 1894, I rehearsed some of my experiences with antipyrine as a styptic in surgical practice, stating that I had for years used a five-per-cent. solution as a spray, sterilizing the water before making the solution. This I had no hesitation in spraying upon any surface, peritoneal, cerebral, or other, from which parenchymatous oozing was taking place to an extent complicating the operation or jeopardizing the success of an ideal dressing. This therapeutic note attracted at least sufficient attention to lead to its pretty general use by surgeons in various parts of the country, from many of whom I have heard commendatory remarks, and from none of whom I have ever heard of disappointment in its use. The present note is to corroborate the favorable esteem in which I have long held this procedure, and to state that I have since resorted to it more widely and more generally for styptic purposes. Thus, I have no hesitation in using it in the urethra, or even in the bladder, in cases of hæmaturia proceeding from either of these locations. Even in the eye it may be used without fear, preceding its use by that of a weak solution of cocaine, though in this location the antipyrine solutions need not be made so strong. On the other hand, it may be used in much larger percentage when the five-per-cent. solution fails to accomplish the purpose; even when small vessels spurt, compression for a few moments with iodoform gauze or acetanilide gauze sopped in this solution will often be effective.

"As every physician will realize, there occur cases of bleeding—for instance, from the nasal cavity or from divided bone—in which even these solutions will be ineffective. My present object is to call attention to the combination of antipyrine and tannic acid, in solution, by which there is precipitated an intensely agglutinative and cohesive substance, of to me unknown chemical composition, which offers the most ideal styptic for certain purposes that I ever dreamed of. This combination I hit upon by accident, and first resorted to in a case of apparently intractable hæmorrhage from removal of adenoid tissue in the vault of the pharynx, in which I was called in consultation by my colleague, Dr. Hinkel. He happened to have at hand a bottle of alcoholic solution of tannin, while I was provided with antipyrine in powder. The case being emergent, I suggested the combination of the two styptics, and added the dry powder to the solution. To our surprise, there was formed at once a gummy mass, at first flocculent, which quickly cohered, the result being a combination the stickiness and adhesiveness of which quite astonished us. A small sponge dipped into the fluid containing this material in suspension was inserted into the postnasal space, and hæmorrhage instantly was checked, not to again recur.

"I have since experimented with these materials, and have found that they may be united in almost any proportion with the formation of the gummy mass, and would suggest that the substances be mixed in proportion to the emergency of the case, and to the desire for little or much of the resulting compound. It is possible by adding strong solutions, or by pouring the powder of one into the solution of the other, to precipitate so much of the agglutinative composition as to make a gum that may be placed about the margin of the bleeding bone—for instance, in operations upon the cranium. Or a small piece of sponge or cotton sopped in this material may be forced into a tooth-socket, or in various other ways its use may be made to result in benefit and satisfaction. There is but one attendant difficulty, that it is so remarkably cohesive that when the time comes for detachment or separation of the tampon it is difficult to remove it. It may be even necessary to wait for sufficient time for the formation of granulations and separation by natural processes.

"I strongly commend to surgeons experimentations with these solutions, and their own determination as to the strength in which it may be best to use them."

A Form of Rotatory Sensation in Labyrinthine Disease hitherto Undescribed.—At a recent meeting of the British Medical Association, a report of which appears in the *British Medical Journal* for November 23d, Professor Guye, of Amsterdam, stated that he had had occasion some months before to show a patient suffering from Ménière's disease, who presented a peculiar form of rotatory sensation which was not quite new to him, as he had observed the same some years ago in a small number of patients, but which had not yet been described. The patient, a man aged forty-seven years, had suffered from influenza four years ago, but had not complained of his ears at the time. Since then he had enjoyed good health. He was often exposed to cold. For the last two months he had had a ringing in his left ear, and suddenly he had in July of last year an attack of giddiness, when he fell down and vomited. This attack returned at first twice daily, and later on at intervals of from ten to fourteen days. When Professor Guye reported the case the patient had been in the hospital for four weeks, and had still now and then an attack, mostly without vomiting. He heard the watch at two metres in the right ear, not at all in the left. His was a typical case of Ménière's disease. He had also symptoms of labyrinthine disease in his left ear, giddiness, rotatory sensation in the direction of the diseased ear, vomiting, and deafness. There was no symptom of any middle-ear disease. With the first attack objects appeared to be turning round like a wheel, or like the hands of a clock, and in the direction of the hands. When that had lasted for some time he suddenly saw everything turning away to the right; then came sickness and vomiting, and if he did not lie down soon he would fall. The rotatory sensations in Ménière's disease were, as a rule, of two forms. Generally patients had the sensation of rotation to the right or to the left round a vertical axis, and, as Dr. George had shown in 1879, to the right when the right ear was diseased, and to the left when the left ear was the diseased one. When the sensation was very sudden it might produce a reflex movement of rotation in the opposite direction. Some patients had, with the rotatory sensation to the right, the idea that the surrounding objects turned to the left. This was usually the case when the attack was severe. When the sensation was not so sudden and lasted a little longer they had the idea that the objects were turning in the same direction as their own head. It was rather remarkable, said the author, that when they had slight fits, accompanied by uncertain gait in walking, they felt more propensity to fall to the side of the diseased ear than to the other side. The slight rotatory sensation in one direction produced the idea of rotation in that direction, which led to an involuntary, though not unconscious, movement in the same direction. When, on the contrary, the rotatory sensation was strong and sudden, it produced a reflex unconscious movement in the opposite direction. This seemed, he said, to be worthy of notice in the interpretation of experiences in animals where there was no other sign of the sensations than the movements induced by them.

These rotatory sensations round a vertical axis might very plausibly be accounted for by irritation of the ampullæ of the horizontal canals. Besides this rotatory sensation round a vertical axis, patients generally described rotatory sensations forward and backward, as if they were turning over, and in some particular cases they described the sensation as if the objects did turn around before their faces with the movement of a wheel or of the hands of a clock. If an explanation of these sensations was to be looked for in the theory of the functions of the semicircular canals, it must be remembered that the two vertical canals, which were sometimes called the frontal and the sagittal, but were better denominated as the superior and posterior canals, could, according to the theory of Crum Brown, afford rotatory sensations round two axes which are about perpendicular to each other, and to the vertical. The planes of these canals did not cut the horizontal plane in the sagittal or frontal, but in the diagonal direction. The superior canal of the left ear corresponded to an axis going through the right eye and the left mastoid process. In a plane parallel to the canal lay the posterior canal of the right ear. The axis, corresponding to the superior canal of the right ear and to the posterior of the left ear, ran through the left eye and the right mastoid process. Slight rotatory sensation in these two pairs of co-ordinated canals could produce the impression that objects were turning like the hands of a clock, the dial of which must be thought of as standing before the patient, more to the right or to the left. More violent rotatory sensation originating in one of these canals would produce the sensation of falling forward or backward, and of turning round about an axis which did not lie transversely, but a little more to the right or to the left.

Generally, said the author, such patients felt so giddy that it was not easy for them to make accurate observations. But there were patients who were intelligent enough to make reliable observations, especially when their attention had been directed to the questions beforehand. Dr. Guye thought it was important to make a note of their impressions, and, if possible, to compare them with the state of the internal ear as found post mortem. He thought this especially important on account of the theories of some French writers, such as Pengnier and Tournier, who considered Ménière's disease as a neurosis occurring in mental degeneration, and the cause of which could not be found or should not be sought in the ears, but in the brain, and on account of the theories of some German writers, such as Böttcher and others, who looked on the static troubles produced in experiments on the semicircular canals as caused by lesions of the brain. Dr. Guye wished to draw attention to this new rotatory sensation in the first place to inquire if it had been already noticed, and, if not, to beg that it should be looked out for in future.

Professor Urban Pritchard confirmed Professor Guye's observations; he agreed with him as to the semicircular canals being the seat of Ménière's disease.

Dr. T. Barr, of Glasgow, stated that he had found that the descriptions given by patients of their rotatory sensations were vague and unreliabls. It would be desirable to direct the patients to observe carefully the nature of the movements. In regard to the view that the semicircular canals formed the static organ of the body, that was far from being proved. In a case in which the whole of the labyrinth was removed as a sequestrum there was no disturbance of the equilibrium. Irritation, not destruction of the nerve termina in the ampulla and utricle, seemed to be the exciting cause by reflex action upon the centre of equilibrium in the cerebellum adjacent to the auditory centre.

Dr. A. Bronner thought that the seat of vertigo was in the brain; the very fact that digitalis had in many instances such a beneficial effect pointed to a central origin. The varying forms of vertigo also spoke against an exclusive canal origin, as in this case the symptoms would be of a more uniform character.

Professor Guye said that the functions of the semicircular canal had not yet been decided. It was of the greatest importance to impress the patient with the necessity of making accurate notes of his sensations.

A Strange Antipyrine Eruption.—In the *Lyon médical* for November 17th there is an account of a singular eruption which came under M. Ballin's observation, the true significance of which, he says, escaped him for a long time. The eruption, which occurred twelve times in the same patient, consisted of flat, round, or oval patches which were of about the thickness of a five-franc piece and of a uniform red color, somewhat like that caused by a burn which had scorched the epidermis only. The affected part was quite œdematous, but the redness did not encroach upon the healthy parts. At the time of the first attack two or three of the patches were transformed into large blisters, the contents of which were citron-colored and transparent; this, however, was not observed during the other attacks. At first the redness was simply erythematous, but when numerous successive eruptions had caused congestion of the same parts several times a dark-red color persisted for quite a long time, and any pressure on the patches revealed the presence of an ecchymotic color under the epidermis.

The eruption, says M. Ballin, was always localized in both hands, especially in the right hand; the rest of the limbs, the head, and the body were not affected, with the exception of a small spot under the right middle toe and another spot on the inner side of the upper gum, near the median incisor. At each successive attack all the parts previously affected were again invaded, and the patches were larger than those of the preceding eruption. There were, besides, usually two or three new patches; so that the last attacks covered a much larger surface than that of the healthy parts.

The eruption gave rise to great itching; it was also painful, especially when the part was brought in contact with a hard body. Scratching or simple friction aggravated the redness and the painful symptoms, which were more marked during the later attacks. There were no general symptoms and there was no albumin in the urine. The eruption began by a sensation of intense pruritus, after which the patches came out rapidly. At the end of the second or third day the painful symptoms diminished and the redness gradually disappeared, and in about ten days the epidermis of the affected parts came off in large flakes, and the attack terminated.

With regard to the ætiology of the eruption, says M. Ballin, the objective and subjective symptoms during the first attack were so like those produced by the bites of gnats and of mosquitoes that the author thought they had been caused by these insects, but as the successive attacks occurred during a season when there were neither gnats nor mosquitoes, it was thought to be an herpetiform eruption of an infectious nature. Carbolic-acid lotions and powders of bismuth salicylate were prescribed, which diminished the painful symptoms, but did not prevent a return of the eruption. The patient was then questioned concerning the eruption, and he recalled the fact that it had always appeared after the ingestion of antipyrine, even in small doses, which he had been in the habit of taking for the relief of headache, to which he was subject, but he had not thought to connect the eruption with the antipyrine, as he had taken the drug many times before without experiencing similar results.

M. Ballin concluded then to make a trial with the drug, and accordingly eight grains were given to the patient for the relief of the headache, and half an hour later he felt the premonitory pricking sensation of an attack, and the patches soon appeared. As herpetiform eruptions are frequently accompanied by general symptoms, the author thought that the headache might be the first symptom of an attack of herpes, and, in order to assure himself on this point, he made another trial with the drug after the patient had entirely recovered from the last attack. Again eight grains were given, and the administration of the dose was followed by a fine eruption absolutely similar to the preceding ones, which terminated in the same manner. This trial, says M. Ballin, was positively decisive; the patient had no headache at the time, and since then there has been no return of the eruption, as the patient has given up the use of antipyrine.

The Prolific Qualities of the French Race.—In the *Journal des sciences médicales de Lille* for November 9th there is an article on this subject by M. G. Eustache. This subject, he says, is an important one, since upon it depend the future of France and also that of the medical profession. It is the fashion to speak of the depopulation of France, or, says the author, to be more exact, the feeble coefficient in the increase of its population. Economists, moralists, hygienists, and physicians have rivaled each other in seeking the cause. Long discussions on this subject have been held by political bodies as well as by learned societies, and many interesting truths have been uttered, but also certain statements which are far from being exact, against which it is of the highest importance to make a bold protest.

Among these erroneous statements, says the author, the principal one is that the French woman has only slight prolific qualities or none at all; that these qualities are constantly diminishing, and threaten to become extinguished; that she has lost this remarkable attribute of her ancestors, and has left it to her Canadian sisters, who, although of the same origin and of the same blood, preserve remarkable prolific qualities. It is this idea, says the author, which is far too widespread in France and also abroad, that should be combated, and it is important to show by recent convincing examples that in France the people, the middle classes, the rich, and the poor, are prolific, that the families increase when they wish it.

The author states that he could cite many instances of the prolific qualities of the French in the interior part of the country and in the North. He recounts an instance which came under his observation in his practice, which shows the remarkable prolific qualities of the French women. The patient in question had been pregnant twenty-four times; her oldest sister had also been pregnant twenty-four times, and the youngest sister twenty-two times. Fifty-three children had been born at full term, twenty-one of whom had lived. Unfortunately, says M. Eustache, scarcely half of this number have a chance of reaching maturity, owing to privations and to a deplorable want of a proper hygienic system, and the number of children will be reduced to four for each family, which is about the general average in French households.

Whatever the cause may be, says the author, we may conclude from this example and a thousand others of a like nature, that the working people of France multiply rapidly, and that, if the hygienic and social conditions under which they live were not so wretched, France would profit largely by this remarkable fecundity.

M. Eustache relates two instances, this time taken from the middle classes. In 1793, H. D., a native of Valenciennes, married, and ten children were born to him; in 1812 he married again, and by this second marriage there were eleven children. Nine of the children died, and of the remaining eleven eight married, and in the year 1891 their descendants numbered over four hundred. The second instance was that of a native of Roubaix who married in 1843. By this marriage there were thirteen children, ten of whom reached maturity and married, and in 1893 their descendants also numbered over four hundred. These two examples show that the French middle classes are as prolific as the working classes. They show, furthermore, that, owing to better hygienic conditions, the results of this fecundity are constant and progressive.

M. Eustache states that he could multiply the number of examples, but the three mentioned are sufficient to prove that the prolific qualities of the French population are not at all impaired.

This subject is, says the author, first of all, a question for the physician and then for the moralist. The physician, by hygienic prescriptions and proper dietetics, by his care and the particular methods which he is constantly putting into practice, may do much for the preservation of the lives of children. It is owing to his information and to his urgent entreaties that a public service of indisputable usefulness has been created. In the accomplishment of his national duties the physician has not failed, and the results that he has obtained are very valuable.

But with regard to the moralist, says M. Eustache, he has a task, if not more difficult, at least more arduous, and if his influence on the progress of the French population is yet undecided and not perceptible, the influence of the physician is evident and incontestable.

Chlorosalol in the Treatment of Diarrhœa.—The *Revue illustrée de polytechnique médicale* for October 31st remarks that this is the name of a new drug which is a salicylic derivative of chlorophenol. Two isomeric combinations are known, orthochlorosalol and parachlorosalol. These are crystalline substances, white, insoluble in water, and soluble in alcohol and in ether. The former has a rather strong odor, while the latter is tasteless and odorless. Girard administers it with success in amounts of from thirty to sixty grains a day in catarrhal affections of the urinary tracts and in cases of diarrhœa. It may also be used to powder certain kinds of wounds, as it has the advantage of not producing any local irritation.

Uterine Trachelorrhaphy.—In the November number of the new London monthly journal entitled *Clinical Sketches Illustrative of Practical Medicine and Surgery* we find in an article by Dr. Arthur E. Giles, of the Chelsea Hospital for Women, the following section, under the heading of The Kind of Cervix that Requires Trachelorrhaphy: "While readily granting that in certain appropriate cases repair of a torn cervix may be followed by the disappearance of general nervous symptoms, I have so little confidence in the value of this or any other operation for the cure of nervous disorders as such that I shall leave this aspect of the question altogether, and confine my remarks to the indications for trachelorrhaphy afforded by definite local conditions.

"When a cervix is torn (as during labor) the raw edges become healed over by granulation and cicatrization, but, as a rule, without uniting. The resulting fissure does not necessarily give rise to symptoms, even if deep or bilateral. For the cervical mucous membrane may gradually acquire the characters of the vaginal epithelium; the external os retreats, as it were, toward the internal, while the anterior and posterior lips of the cervix become in reality lips or lappets, which can be readily separated to a greater or less extent. A cervix in this condition is not uncommonly discovered when a vaginal examination is made on account of other symptoms; and we may admit, as a general statement, that a laceration that has healed over does not, as such, require repair.

"If general neurotic symptoms are found to coexist with such a condition as I describe, an attempt to cure them by local treatment will be an almost certain failure.

"But the lesion may take a less favorable course. The exposed cervical mucous membrane may become unhealthy, either alone or as a part of a general endometritis; it then becomes congested, and, in consequence, the lips become separated. I believe that the tendency to separation is exaggerated by a marked coincident flexion of the uterus. The everted mucous membrane is then bathed in the unhealthy secretions (arising partly from the uterus) found in the vagina; and it is but a short step from this condition to that of erosion, with the formation of the retention cysts known as Nabothian follicles. The congestion and œdema of the cervix commonly spread to the body of the uterus, which becomes heavy and enlarged, resembling the condition found in subinvolution. With the chronic endometritis and metritis so produced is frequently associated prolapse of the ovaries into Douglas's pouch; especially when there is also retroflexion. The ovaries share in the congestion and become unduly sensitive. The usual symptoms complained of under these circumstances are abundant leucorrhœa, sacral aching, a feeling of weight and 'bearing down' in the pelvis, and dyspareunia.

"We have here in outline the picture of a case requiring the operation of trachelorrhaphy. Yet must this not be done at once; a little preparation is necessary. Firstly, the patient should be kept in bed for ten days if circumstances allow; and meanwhile the congestion is relieved by the usual applications of tampons and douches. The uterus should be restored to its place when this is possible, and one or more applications may be made to the endometrium, according to the extent of the endometritis. In some cases these measures will suffice for relief, or even temporary cure; but there is considerable likelihood of a return of symptoms. But in any case this stage should be arrived at before repair is attempted, otherwise there is risk of non-union, and so of failure of the operation."

The Dangers of Potassium Iodide in the Treatment of Goitre.—At a recent meeting of the *Société de thérapeutique*, a report of which appears in the *Progrès médical* for November 23d, M. Ferrand related the following case, which had come under M. Couchon's observation: A man, thirty-five years old, suffering with an enormous goître, had been taken with congestive symptoms. A physician had prescribed an iodized ointment and sixty grains of potassium iodide a day. The patient continued the treatment for three weeks, at the end of which time the goître had diminished in size, but coryza, dyspnœa, diarrhœa, trembling, and cachexia had supervened, and the patient had died at the end of a month with symptoms of cardio-pulmonary paralysis. M. Couchon thought that these symptoms might have been due to atrophy of the thyreoid body.

M. Ferrand remarked that Lebert thought goîtres were particularly susceptible to treatment with potassium iodide; Reuser had also observed the same thing. M. Jasiewicz said that occasionally very small doses had caused symptoms of iodism. M. Paul said that iodide poisoning was more frequently caused by personal susceptibility than by the size of the dose. M. Ferrand thought that the difficulty of elimination should be taken into consideration. In the case in question, he said, the poisoning had given rise to troubles of nutrition much more profound than could be attributed to the cachexia strumipriva. M. Paul remarked that in cases of poisoning from potassium iodide iodism should not be exclusively considered. The different iodides did not act wholly through the iodine, as the different action of each of the following drugs demonstrated: Potassium iodide, sodium iodide, iron iodide, and the tincture of iodine.

The Northern Tri-State Medical Association.—The semiannual meeting was held in Toledo on Tuesday, December 10th, under the presidency of Dr. John North, of Toledo. The programme included the following titles: The address of welcome, by Dr. W. C. Chapman, of Toledo; The Examination of the Eyes of Railway and Marine Employees, by Dr. J. H. Curry of Tolédo; Some of our Late Therapeutic Resources, by Dr. J. F. Jenkins, of Tecumseh, Mich.; A Report of the Last Fifty Abdominal Sections Done, by Dr. W. J. Gillette, of Toledo; The Present Physiological Basis and Clinical Aspects of Localization in Diseases of the Brain Cortex, by Dr. G. W. McCaskey, of Fort Wayne, Ind.; Some Retroperitoneal Abscesses, by Dr. Hal C. Wyman, of Detroit; The Rational Therapeutics of Infantile Convulsions, by Dr. W. A. Dickey, of Tiffin, Ohio; Extra-uterine Pregnancy, by Dr. William H. Humiston, of Cleveland; The Use of Chloroform in Anæsthesia, by Dr. C. B. Parker, of Cleveland; Methods of Dealing with the Stump in Operations for Appendicitis, by Dr. Charles N. Smith, of Toledo; and Miscellaneous Observations upon Twenty Recent Cases of Diphtheria treated with Antitoxine, by Dr. O. P. Ohlmacher, of Cleveland.

The Albany Medical College Alumni Association of "Greater New York."—A large number of representative medical men, many of them prominent in this and adjoining cities, who are graduates of the Albany Medical College, met at the residence of Dr. Horace T. Hanks on the evening of December 5th and organized an association with this title. The following officers were elected: President, Dr. John W. Warner; vice-president, Dr. Horace T. Hanks; secretary, Dr. Warren C. Spalding; assistant secretary, Dr. Robert F. Macfarlane, of Long Island City; treasurer, Dr. Allen T. Fitch; governors, Dr. Henry F. Muller, of Brooklyn, Dr. L. N. Lanehart, of Hempstead, L. I., and Dr. Robert E. Finey and Dr. John A. Cutter, of New York. Inasmuch as there are over a hundred graduates in "Greater New York," these gentlemen feel a certain pride in honoring their alma mater, and have taken this course to do so. The first annual dinner is to be given on Thursday, January 9, 1896.

The American Electro-therapeutic Association.—The secretary, Dr. Emil Heuel, announces that a general meeting of the members of this association who reside in New York and in the immediate vicinity, and of the members of the medical and electrical professions who are interested in the medical and surgical application of electricity, was to be held at the residence of Dr. Robert Newman on Tuesday evening of this week. The objects of the meeting were stated to be to receive suggestions and to determine the exact time and place for holding the next, the sixth annual meeting of the association, to be held in Boston in September, 1896; to receive the titles of papers intended to be read and to select some themes for discussion; and to discuss the future prosperity of the association and other important matters.

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Original Communications.

CONCERNING BEDSORES:

THEIR ÆTIOLOGY, PATHOLOGY, AND TREATMENT.*

By ADOLPH RUPP, M. D.

Theoretically, or as a study, bedsores are important and interesting on account of their origination and subsequent developments under many varying and trying circumstances. This interest is heightened by the important practical question—one of prophylaxis, which might start medico-legal complications—"To what extent can the physician or surgeon be held accountable for their origination and development?"

Furthermore, the study of bedsores is enhanced in interest and importance because at certain critical times they are an auxiliary aid in shaping a decided prognosis or accentuating an ominous one that may already have been given.

Practically, bedsores are always unpleasant and sometimes disgusting complications to deal with. They do not always increase the conscious suffering of the patient, but they aggravate the anxiety and fretfulness of the patient's friends, besides adding to the doctor's cares and responsibilities. Not infrequently, bedsores make bad worse by increasing the conscious suffering of patients, both in the way of pain and the disturbances due to surgical dressing, etc.; and, besides, bedsores at all times expose the patient to a series of possible septic complications.

Unfortunately, in not a few cases, trying for the doctor and patient, nothing can be done to prevent the development and growth of bedsores, and all that can be accomplished therapeutically is to keep the decomposing mass from becoming putrescent.

Bedsores demand medical vigilance and care, as well as surgical treatment; and any and all specialists at some time or other must treat them.

Ætiology.—Some are content with defining a bedsore as being "a form of ulcer caused by continual pressure consequent on the recumbent posture" (Cantlie). Others would find this definition too narrow and even exclusive in that it fails to take cognizance of those ulcerative and ulcero-gangrenous processes which can not be said to be due to continued pressure, for sometimes bedsores develop on parts that are not subjected to pressure. Cohnheim limited the term bedsore (decubitus) not to those sores which occasionally develop under badly applied bandages, or where careless nursing has allowed urine and fæces to soak the genitals, buttocks, and thighs into gangrenescent inflammation, but to those ulcerative and gangrenous processes which occur in the course of debilitating diseases after the parts have been only very slightly injured (to use a hard word) by the mere weight of bedclothes or an otherwise insignificant wetting. Even Cohnheim's definition may, from a clinical point of view, be looked upon as being too partial and exclusive. Clinically our experience obliges us to treat not *a* bedsore, but *bedsores*; and they differ as our cases do which become complicated by them. Not only are bedsores influenced by the particular diseases which they complicate, but also by the other complications of the same disease. Then, too, Wunderlich tells us, and most of us can corroborate his experience with our own, that some individuals are more prone to develop bedsores under apparently like conditions than others. Furthermore, bedsores do not occur only in those who have been abed for weeks or months, but they may develop on the second or third day of illness, as in some cases of acute hæmorrhagic or inflammatory diseases of the brain and spinal cord.

Considering all that has just been said, it would seem best not to bind ourselves down to any inelastic definition, but to include under the caption *bedsores* all ulcerations and gangrenous processes that make their appearance in the course of acute and chronic diseases while the patient is in bed. Bedsores may develop acutely or quickly, and extend down to the bones in a week or ten days from the onset of the process. Such are the acute bedsores first described by Samuel and later on more fully by Charcot. Or bedsores may develop slowly—chronically—and run a long, irregular, tedious course. They also differ as regards their characters—appearances. They may be seen as mere abrasions, or as a macerative or gangrenescent inflammation of the skin, or as a dry gangrenous patch (Wunderlich); or they may start modestly enough, and then extend circumferentially, and proceed down to the bones, which may become implicated. Bedsores may denude bones and open up joints. One or the other or both buttocks may be converted into a large slough within a week or ten days.

The causes of bedsores may be classified as local and constitutional; as predisposing and exciting; some may be classed as trophoneurotic; and they may be studied and classified *seriatim* according to the diseases which they complicate. Nature is elusive here as elsewhere, and defies arbitrary or theoretical limitations. Many causes, conceivable and often some that have not been found, conspire in developing and maturing bedsores.

Unless predisposing causes are at work, so-called local or exciting causes will fail to start bedsores, and what Leyden says, particularly in this respect of patients suffering from diseases of the spinal cord, may be extended and applied to many other diseases which are complicated by bedsores—namely: "So long as the patient has enough muscular power left to move himself unassisted (and consciously, I would add), no bedsores, will develop as a rule, and if any do show themselves they will be slight and superficial." Lack of voluntary or conscious muscular power and a benumbed sensorium indicate general debility following upon cardiac exhaustion, respiratory insufficiency, and a sluggish capillary and plastic circulation; and, with a bad general condition of this kind, the surface of the body is depraved to such an extent as not to be able to resist the damaging effects of otherwise insignificant local injuries, such as urinary and fæcal uncleanliness, slight abrasions, and bedclothes' pressure.

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* Read before the Society of the Alumni of the City (Charity) Hospital, November, 1895.

All fevers give rise to those influences which predispose to the development of bedsores. Bedsores complicate severe intermittent fever, remittent fever, oftener typhus fever, and oftenest typhoid fever. Mental depression may at times be no mean factor in aiding the physical influences in starting bedsores. C. Mettenheimer found bedsores quite frequently on the sacrum and over the trochanters in French prisoners of war who suffered from typhoid fever in Germany during the Franco-German War in 1870–'71. Bedsores are more frequently seen in typhus and typhoid fevers, says Murchison, when other complications exist, and less frequently when other complications are missing. When bedsores do occur they prolong the disease, and may give rise to gangrene of the lung. Hoffmann has seen these so-called pressure (gangrene) bedsores extend down to the bone in typhoid-fever patients, and Winniwärter has seen bedsores of this severe type develop during the first week of typhoid fever. Old age and general debility always greatly favor the development of bedsores in any of the diseases that are complicated by them. Children and young persons are not often the subjects of bedsores, even during the course of such an enervating disease as typhoid fever. In children Barthez and Rilliet found six affected with bedsores in one hundred and seven cases of typhoid fever. Surgical diseases of the spine and hip, and fractures which necessitate an immovable back rest for weeks, with little or no movement, may bring on bedsores on the parts most subjected to pressure. Other diseases, like pulmonary consumption, cirrhosis of the liver, carcinomatous diseases, and syphilis in the later stages of neglected cases, do not generate bedsores unless a very much depraved state of general and local nutrition has been established, and when this is the case too much attention can not be paid to staving off the action of local exciting causes—pressure, "toilet" neglect, etc.

When bedsores as complications of nervous diseases are studied, we find several factors at work in their production and localization that are absent in other (constitutional and infectious, etc.) diseases. Here the special influences of the mind and nervous system must be taken into account, irrespective of, as well as in connection with, trophoneurosal influences, plus all the possible causes that have already been referred to.

Chronic diseases of the cerebrum or spinal cord—such as tabes dorsualis, multiple sclerosis, neuritis, tumors, etc.—unaccompanied by psychical disturbances, are not complicated by bedsores until general debility has rendered the patients irrecoverably bedridden. In this connection I would quote a remark by Sir James Paget and a case of his in illustration; both are as important as they are interesting: "It may perhaps be said that when parts are deprived of nerve force, their nutrition may be maintained when all other conditions which act in the normal process are undisturbed, but fails rapidly and extremely when those other conditions are defective, as in fevers, or in such a case as the following:

"A man with nearly complete paraplegia and distorted feet, the consequence of injuries of the spine, in whom some of the tendons were divided subcutaneously, and appeared to be healing; but a bandage having been applied rather tightly, sloughing ensued at the instep, on which the chief pressure fell, and extended widely and deeply to the ankle joints. Both the dorsal arteries were laid bare when the sloughs separated, and both the ankle joints, and the case presented a most striking example of defective self-maintenance of the paralyzed parts. But granulations formed after the separation of the sloughs, and the healing process went on slowly but uninterruptedly until all was covered by a well-formed scar."

Severe acute intracranial and intraspinal diseases, traumatic, hæmorrhagic, or inflammatory in character, may develop acute bedsores (Samuel, Charcot), and such diseases may run their course without having been complicated by a bedsore. When brain diseases are the primary or initiating causes of bedsores the sore forms on the paralyzed side; but when the initiating disease is unilateral in the spinal cord the bedsore will form on the anæsthetic or non paralyzed side. Diseases affecting the anterior portion of the cord, even though they be accompanied by very marked emaciation in the paralyzed parts, only very rarely are complicated by bedsores, but the diseases affecting the *posterior portions* of the cord are frequently accompanied by bedsores. Anæsthesia *by itself* has nothing to do with the development of bedsores, because they develop in parts after sensibility has become re-established, as well as in those parts that have never been bereft of sensibility. However, anæsthesia may be looked upon as an auxiliary though subsidiary factor in the production of bedsores, because it causes the patient to remain listless to filth and injury in the absence of a faithful nurse.

And this brings us to the consideration of the psychic factors in the production of bedsores in the broad sense that has been indicated. I have seen bedsores on the backs and hips of hysterical women. Two cases I remember well.

One was a hospital case, and the other was seen in private practice. Both patients had become very much emaciated from lack of sufficient and proper feeding. Both had minds that had become very much depressed in every respect except one: both were exceedingly alive to the importance of their troubles as they affected themselves, and both had an emotional craving for sympathy which was successful in enslaving the rest of their respective families to their whims and fits. Both these women had been treated for diseases from which they did not suffer—one for softening of the spine, and the other for chronic meningitis of the spine. Both these women might be called refined. Both were well educated. The one was a school teacher, and the other a woman who had had too much time as her own. The treatment based on false diagnoses to which they had been subjected had only added fuel to the fires, and was completing the wreckage of two good women. In both these cases there was an erotic element, and I inferred that the bedsores on the sacrum and along the spine (which sores were neither gangrenescent nor large, but inflammatory and limited) were caused by friction incident to movements peculiar to their mode of practising masturbation. Under proper treatment these patients recovered.

Insane people, especially *typical paretics*, paretic dements, who are helpless and bedridden, *often*, say Spitzka, Bucknill, and Schüle, have bedsores, and they are attributed to urinary and fæcal filthiness, bed pressure, general nutritive depravity, besides neurovascular inefficiency. In acute maniacal delirium bedsores may develop at an early stage of the distemper, due in great measure to the self-violence of the patient and the difficulty of keeping him or her clean. Bucknill calls attention to the fact that general paretics whose lower extremities have become paralyzed, but who retain control of their upper extremities, who are restless night and day, destroying everything within their reach, may scratch or otherwise injure themselves, from which traumatisms bedsores may develop at times.

Schüle says acute decubitus develops in typical paralysis—paretic dementia—during the later stages, despite the best care as regards careful watching, cleanliness, and nursing, and Spitzka holds that such malignant bedsores are apt to show themselves after apoplectiform seizures.

Pathology.—The biopathological influences at work in conditioning and developing bedsores may be summarized under four headings:

I. Blood changes: (1) Bacterial and coccal, (2) chemical, (3) corpuscular.

II. Neural changes: (1) Psychical derangements, (2) vaso-motor paresis, (3) anæsthesia.

III. Vascular changes: (1) Arterial dilatation, (2) perivascular or plasmic torpor, (3) venous hypostasis.

IV. Local cellular disorganization and bacterial and coccal activity.

The participation of these influences, individually, in part, or altogether, varies with the character and extent or gravity of the ulcerating or gangrenous sore.

Sometimes bedsores start as erythemas, pustules, furuncles, or erosions, and at other times they develop from bluish-red or greenish spots or patches. Thus they may begin as an inflammatory process and heal, or they may begin as an inflammatory process and end in gangrene. Bedsores complicating acute diseaes of the brain and of the spinal cord are usually non-inflammatory in character and rapidly assume gangrenous characteristics. The gangrene may be dry or mummiform, moist and decomposing, or moist and putrescent. However, all three forms may be found existing in one sore. In general paralytics, where both hemispheres of the brain have become much disorganized by hæmorrhages, and in extreme cases of dementia, dry gangrene is aptest to be found (Bucknill). And in such cases, "when mortification is taking place on the dorsal and other regions, old sores granulate and heal with rapidity."

After severe cerebral or spinal lesions, or exacerbations of such, pink, reddish, or violet spots appear on the sacrum, buttocks, etc., and on them vesicles or bullæ. In favorable cases these vesicles and bullæ dry up, and the threatened gangrenous bedsore disappears (Ross); but usually the vesicles and bullæ burst, and the gangrene advances and destroys muscles, tendons, and bones, even opening up the hip joints (as in a case of mine), and advancing into the spinal canal and giving rise to an ichorous meningitis. Leyden states that pulmonary emboli may develop from acute decubitus, and Wunderlich teaches that pneumonias may be caused by ichorous absorption, besides inflammations of the serous membranes, dysentery, and pyæmic processes, which may appear quite insidiously or be initiated with chills.

Dr. William Stokes writes that it is "an error to attribute what are termed bedsores in fever simply to mechanical causes." And he continues: "I am almost convinced that bedsore in fever is often one of the group of secondary affections analogous to the ulceration or the tumefaction and ulceration of the glands of the intestine or the bronchial affection which occurs in the middle stages of the disease, or to the other secondary organic diseases of fever; and if analogous to them, it should be more or less observed to be under the law of periodicity, and it should appear and disappear at a certain time, or at least exhibit a tendency to do so. We have observed this very curious fact." And in his book on fever he details several very interesting cases which substantiate his speculations. One case—a woman sick with typhoid fever—successively developed thirty sores on various parts of her body, face, etc.; the development of the sores finally stopped, and the sores already formed and sloughing began to heal, "although the constitutional symptoms had not subsided." This patient finally recovered.

Treatment.—The treatment of bedsores is often much more easily conceived and treated on paper—in some of our text-books and "cyclopædia" articles—than can possibly be consummated in reality.

Success in the treatment of bedsores is limited by the curability of the diseases which they complicate. The nearer the inflammatory type bedsores are, the more readily they can be cured, and the simpler the remedies for doing so will be.

Even though general depression be great and malnutrition extreme, as in fevers and certain nervous disorders, and the sore gangrenous, if decomposition can not be checked or the sore forced to assume a reparative reaction, antiseptics properly applied, in connection with careful nursing, will mitigate evils by inhibiting putrescence and ichorous or septic infections.

Often, but by no means always, bedsores can be prevented by careful and efficient nursing; but when it is said, as in Keating's *Cyclopædia of the Diseases of Children* (article, Typhoid Fever, by J. C. Wilson, M. D.), "bedsores do not occur in childhood except as a result of inefficient nursing," some of us will deny both the correctness and fairness of the statement.

Bedsores do not always announce their coming by symptoms—paræsthesias and pain. The peculiar diseases which they complicate must keep our attention awake and put us on guard against their appearance.

The means at our command for staving off bedsores, or, when they are present, preventing or mitigating their aggravation, and when possible curing them, are such internal medicaments and external remedies as have the reputation of conserving and stimulating the powers and qualities of the integuments against giving way to the mixed effects of unavoidable pressure, the possible sogging, solvent effects of urine, and the deleterious activity of noxious bacteria.

Internal medication, in so far as bedsores are concerned, is usually an auxiliary part of the general internal treatment of the diseases complicated by bedsores. When restlessness, which interferes with the healing of a bedsore, is present, opiates or other anodynes may be given, choice here being determined by the nature of the original disease and the general condition and idiosyncrasies of the patient. The condition of the bowels always demands attention. If diarrhœa is present it must be checked. Obstipation or constipation must be taken in hand for two reasons: (1) To prevent general systemic depression from auto-infection; (2) to prevent the diarrhœas which frequently follow periods of obstipation in bedridden patients. Not only in chronic cases, but in cases of acute disease, especially in old or feeble people, the condition of the urine and bladder demands attention. Incontinence may result from an acutely overdistended as well as from a paralyzed bladder. Aseptic conditions depend on a free flow of acid or neutral urine; and, when the urine must be drawn, it should be done with a surgically clean catheter. When the urine has become alkaline or ammoniacal and irritating to the parts it flows over, Leyden advises the administration of tannic acid, and Whitla that of boric acid. In the prevention of bedsores much can not be expected from internal medication, although Bucknill says that in certain cases of general paralysis threatened with convulsions, the timely dose of chloral (thirty grains) in brandy and water will check the convulsions and prevent the development of bedsores.

It is no easy job to keep some patients clean and dry, but thorough cleanliness and dryness of the skin are essential elements in the prophylaxis of bedsores.

All other external treatment of bedsores divides itself into (1) relieving or mitigating pressure on the parts exposed to it; (2) the application of medicaments to the skin for the purpose of maintaining such a condition thereof that mere accidental wetting will not break it, etc., and for the purpose of establishing local asepsis. Mitigating or lessening pressure may be accomplished more or less successfully by means of lint, oakum, and various kinds of pillows and cushions; better by air or water cushions; but best of all by means of a water bed, which unfortunately can only rarely be had. The advantages of the water bed are enumerated by von Ziemssen as providing—1, smoothness; 2, equalized pressure or elasticity; 3, the qualities of a heat abstractor; 4, the quality of diminishing the relative weight of the patient, proportioned to the amount of water displacement. An air bed (cushion) is neither so cool nor so elastic as a water bed.

Leyden has advised faradaizing and galvanizing parts which are threatened with bedsores. Although this recommendation has special reference to cases of nervous disease, electrization can do no harm in other forms of disease.

Most of the external medicinal compounds used for preventing the formation of bedsores, by hardening the skin against the effects of pressure and toilet inefficiencies or neglect, have alcohol or some bactericide as an ingredient. Thus, Pepper commends whisky with alum as a wash; Erichsen, two grains of the bichloride of mercury to the ounce of spirit of wine. All of us probably have similar favorite mixtures of our own. Some authorities do not like ointments. They do good in some cases, especially on parts exposed to friction as well as pressure; besides, the fats may also act as local nutrients. Cleanliness is as important a consideration when the skin has become broken and ulcerated or gangrenous as it is in the way of prophylaxis.

When the skin has become opened, abraded, pustulated, ulcerated, or otherwise inflamed, the various antiseptic dressings, moist, dry, or fatty or oily, are to be thought of and applied, according to the indications of any particular case, and the financial abilities of the patient. Dressings should be changed as often as they have become soiled—which is acting within the rule of cleanliness.

When sloughs have formed, their separation may be hastened by applying charcoal or chlorinated poultices. A simple flaxseed poultice may answer all purposes. Stokes found a simple flaxseed poultice do well after the presupposed better chlorinated poultice had proved to be disagreeable and inefficient. After the slough has fallen away, the ulcer must be treated antiseptically and otherwise on general surgical principles, stimulating, grafting, etc. "But nothing will do good," says Erichsen, "unless pressure is removed and the general health improved, and then they (when simply surgical or inflammatory in character is meant) will speedily recover under the most simple treatment."

Malignant bedsores which complicate myelitis, apoplexies, etc., are beyond curing in many instances, although something can be done in the way of diminishing or preventing putrescence and making the surroundings of the patient bearable.

To conclude, after having taken a fairly full view of bedsores, it may be said that they vary in degree as to severity, and qualitatively in character, according to the individual nature of the patient and the diseases which they complicate. A bedsore is not an isolated entity or a simple sore. Bedsores are pathogenetically more or less intimately related to the pathogenesis and pathological processes and progress of the diseases which they complicate. These considerations, evident and unoriginal though they be, are sometimes ignored, and often not sufficiently taken into account, by some text writers. On the other hand, to say that purely local conditions, particularly pressure and moist uncleanliness, are frequently too exclusively insisted on is not saying that they are not deservedly of great clinical importance. But questions of ætiology imply therapeutic answers and responsibilities; and it is but fair to affirm that exclusive or one-sided ætiological teaching can result in only incorrect or exaggerated therapeutical expectations which perchance may expose the practitioner and even the art of medicine to the unfair criticisms of people who are ever ready to expect much, and who are not capable of judging correctly in these matters, especially so when the data or concepts authoritatively furnished are defective or fallacious.

406 West Thirty-fourth Street.

A NEW OPERATION FOR CONGENITAL PTOSIS,

WITH REPORT OF TWO CASES.

By T. C. EVANS, M.D.,
LECTURER ON OPHTHALMOLOGY AND LARYNGOLOGY
IN THE KENTUCKY SCHOOL OF MEDICINE;
MEMBER OF THE LOUISVILLE SURGICAL SOCIETY, ETC., LOUISVILLE.

In the condition known and described as ptosis the elevator muscle of the superior eyelid, the levator palpebræ, is absent, deficient, or disabled. This muscle arises from the under surface of the lesser wing of the sphenoid near the apex of the orbit, and is inserted into the anterior surface of the superior tarsus. In elevating the lid it holds the tarsus firmly against the globe, and draws the superior border under the orbital arch, producing the oculo-orbital fold in the integument.

In congenital ptosis the levator palpebræ is absent, and the opposing muscle, the orbicularis palpebrarum, is unrestricted in its action; this, together with the slight influence of gravity, depresses the superior lid and narrows the palpebral commissure so as to interfere with or altogether exclude the light from the pupil. The oculo-orbital sulcus is obliterated, giving the face an inane and inexpressibly stupid aspect. Epicanthus and flattening of the nose are frequently associated with congenital ptosis. In order to see anything, even objects on or below the horizontal meridian, the patient is compelled to throw the head backward, and distort the face by tension of the orbicularis oris and zygomatic muscles in his efforts to widen the palpebral commissure by depressing the inferior lid, presenting a position and a physiognomy that are pitiable and distressing in the extreme.

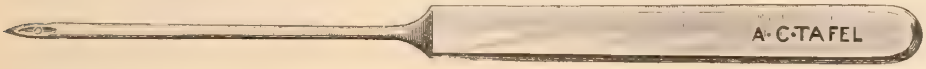

Fig. 1.

I am not sufficiently versed in the ætiology and classification of malformations and deformities to say whether the condition is due to an arrest of development, to maternal impression, to some pathological condition of embryonic life, or to some atavistic or degenerative process.

In the two cases I have reported it seems to have been hereditary. The boys are brothers; the father and grandfather were afflicted in the same way. It is rather rare. Only three cases have come under my observation in six years of ophthalmic practice. All my cases have been bilateral. For the correction or relief of this deformity several operations have been devised by different men. Among the most prominent may be mentioned those of Snellen, Eversbuch, Panas, and Mules, a detailed description of which is not necessary further than to say that they all involve the same principle, that of making the occipito-frontalis muscles assume the duties and functions of missing levator palpebræ.

In May, 1892, I exhibited before the Louisville Clinical Society a case on which I had operated by Panas's method.

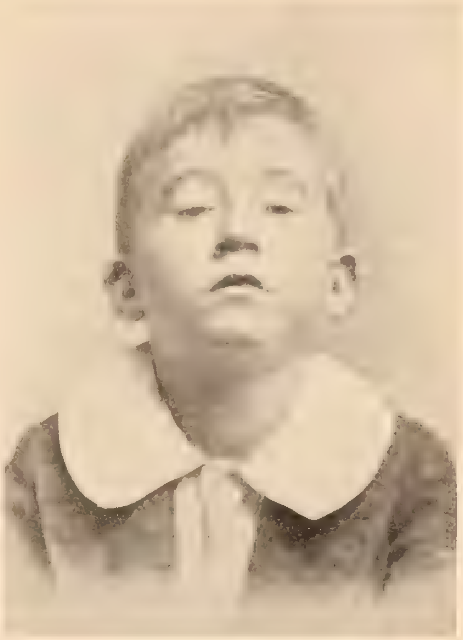

Fig. 2.—Case I, before operation.

In commenting on the case and the operation at that time, I said (*American Journal of Ophthalmology*, August, 1892):

"She has, as you see, pretty good control of the upper lid by the action of the occipito-frontalis, and no longer distorts the face in her efforts to depress the inferior lid. She has been in school for the past year and has no trouble in keeping up with her classes.

"The only disfigurement from the rather extensive operation

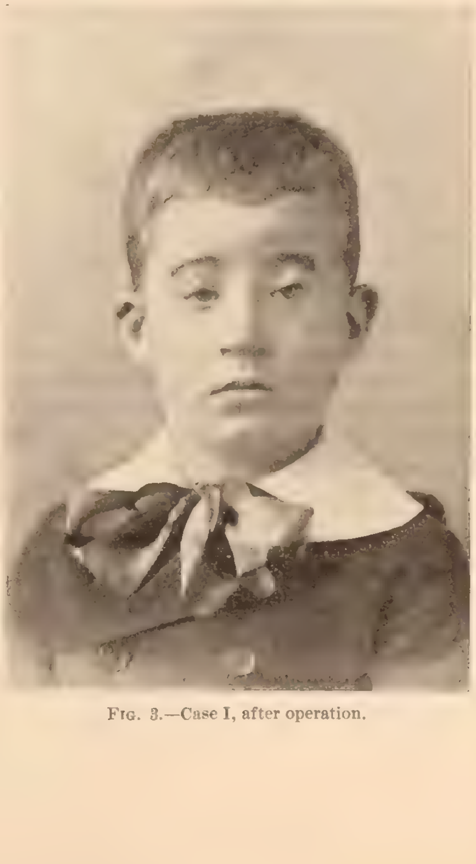

Fig. 3.—Case I, after operation.

is the small pit under the brow where the slip of integument was passed through. A few hairs persistently grow from this opening. This is the only case in which I have attempted this operation—in fact, the only time I have ever seen it performed. While the result has not been perfect so far as correcting the deformity is concerned, the improvement has been so marked as to lead me to regard this as the most rational and the most successful of the various operations that have yet been devised for the relief of this peculiar and distressing deformity."

When the cases that I now wish to report came under my care, I attempted to relieve them by the same operation, but with indifferent results. I found both patients bad subjects for plastic surgery, on account of an apparent predisposition to eczema. In spite of every precaution the skin around the edges of the wounds would become eczematous, and later the stitches would suppurate, which, of course, loosened the flap and destroyed the effect of the operation and left some cicatrices which are still plainly apparent. While some improvement followed the operation, as must necessarily be the case in any procedure that would produce vertical cicatrices of the superior lid, the result was so far from satisfactory that I decided to operate a second time by a new method, or, more correctly speaking, by a radical modification of Mules's method. With the patient anæsthetized I made an incision three eighths of an inch long in the free margin of the lid and about a sixteenth of an inch in depth, the site of the incision being midway between the outer and inner canthus. I then made a second incision three fourths of an inch in length above the brow, extending through the integument and occipito-frontalis muscle (the most prominent part of the occipito-frontalis having been determined and marked prior to the anæsthesia). Then, taking a flat needle with a long, flexible shank with the eye very near the point, carrying about six inches of No. 30 silver wire, I passed it into the lid at the inner extremity of the marginal incision, passing upward between the orbicularis muscle and the tarsus, under the brow, and coming out at the inner extremity of the incision above the brow. The needle was withdrawn, leaving the wire in position; the other end of the wire was passed through the eye of the needle and carried into the outer extremity of the marginal incision and brought out at the outer extremity of the superior incision, and the needle withdrawn as in the first instance. The loop of wire was drawn into the marginal incision and the wound closed with four or five firm sutures. The ends of the wire were then passed through a perforated shot and traction made until the desired elevation of the lid was secured. The shot was then pressed with pliers and the excess of wire clipped off, leaving a quarter of an inch on each side of the shot. The incision was closed with silk sutures. Afterward the superior incisions were dressed with iodoform gauze; the marginal incisions were left without dressing. Both eyes of each patient were operated upon under one anæsthesia. The sutures were removed from both superior and marginal incisions forty-eight hours after operation. The results in the four operations have all been successful far beyond my expectations, as you can see from the photographs taken before and after the operation.

Dr. Mules was the first to suggest the permanent wire suture. His operation was described to the International Congress of Ophthalmology at Edinburgh in August, 1894. In May, 1895, he gave the results of his further experience before the London Ophthalmic Society, with the following description (*Lancet*, May 11, 1895):

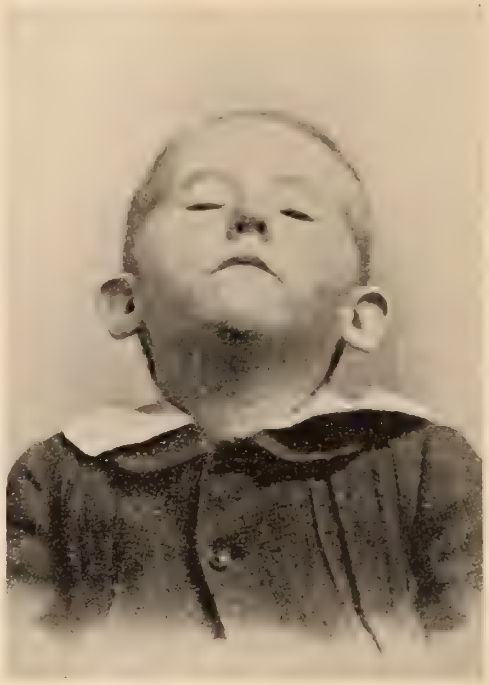

Fig. 4.—Case II, before operation.

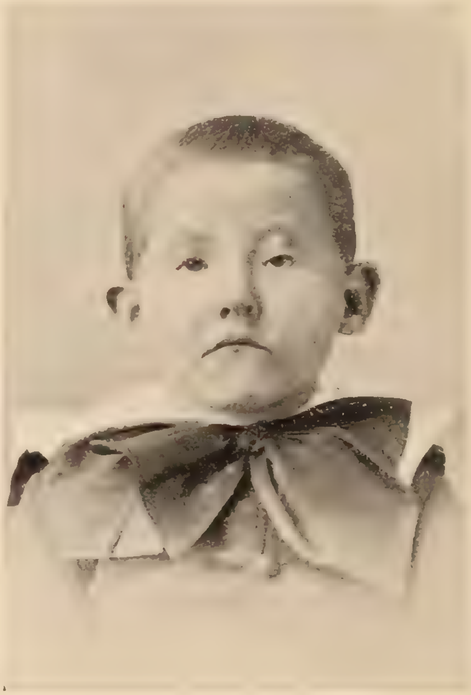

Fig. 5.—Case II, after operation.

"Two needles with eyes near their points were passed deeply through the frontalis tendon over the eyebrow, and their points brought out at the margin of the lid behind the lashes, taking up a substantial part of the tarsal cartilage on their way. A piece of silver wire was threaded through each needle, which was then withdrawn, leaving the loop of wire passing from the brow to the edge of the lid and back to the brow again. This was then tightened until the lid was sufficiently raised, the edge of the lid being slightly grooved by an incision to allow the wire to sink into the substance of the lid. One end of the wire was then passed under the skin and made to emerge by the side of the other end of the wire. The two ends of the wire were then twisted on each other until the lid was raised permanently, the ends were cut off, and the wire allowed to sink below the level of the skin. The skin at this point and at the lid margin healed over the wire, which remained permanently fixed in the substance of the lid. From further experience it was found that the wire remained in position without causing irritation; the lids could be closed, and remain closed during sleep. All kinds of wire had been tried, but it had been found that silver wire was the most satisfactory. It was necessary to note at the time of the operation the situation of the twisted end of the wire in case it became necessary to remove the suture afterward."

The points of superiority of the operation as devised by me are that the incisions make it possible to bury the wire from the start without waiting for it to "sink below the skin" of its own accord. With the incisions the recovery from the operation is practically complete in forty-eight hours. The introduction of the needle at the lid margin instead of above the brow removes the possible danger of passing through the lid and puncturing the sclera, and secures a better position for the suture. With the perforated shot the degree of elevation of the lid is quickly, easily, and accurately controlled without endangering the integrity of the wire by twisting. Then, if at any time after the operation it is desirable to modify its effects, it is only necessary to cut down upon the shot, which can readily be felt beneath the skin, and diminish or increase the effect by altering the length of the wire loop.

In all four of the operations I used the No. 1 shot, and had the perforation made barely large enough to admit the two wires.

As to the permanency of their result, the only thing that could unfavorably influence it would be the migration of the suture. The size and shape of this, together with the imbedding of the shot, make this so remote a probability as to practically eliminate it from consideration.

My course in advocating early operative interference in the cases has been criticised as being at variance with the time-honored procrastination policy of the authorities, but the results obtained in all three, more especially in the last two cases, as reported by me, certainly demonstrate the correctness of my position.

LEGISLATION *VERSUS* INDISCRIMINATE EXPECTORATION.*

By WILLIAM G. BISSELL, M. D.,
BACTERIOLOGIST, DEPARTMENT OF HEALTH, BUFFALO, N. Y.

It has only been comparatively within the past few years that medical men have known the definite means by which consumption can be prevented. Scientific men the world over have worked on the subject, and fortunately the time has arrived when the laity begin to realize the possibility of lessening the amount of the disease and are seeking information as to how it can be accomplished. When Robert Koch, some thirteen years ago, claimed that he had discovered the germ of tuberculosis, he was looked upon somewhat as a theorist; but the ultimate, practical results due to that discovery will undoubtedly amount to as much toward the prevention of consumption as Jenner's vaccination has toward the elimination of small-pox.

The view that tuberculosis is an infectious disease, or rather, let us say, a communicable disease, has gradually pervaded the profession, until to-day the statement may be made that *it is* a communicable disease with little fear of controversy.

The first statement is, then, that consumption is an infectious, communicable disease.

The second statement, the one that would naturally follow, is that the specific source of this infection, the cause of the disease, is a germ, and it is this germ alone that can cause consumption.

Without the passage of this specific germ into the body, without the transmission of this particular germ in some way or another in a living condition from the sick to those open to such infection, consumption can not develop, therefore can not spread.

The disease, then, can be prevented in one way by any means which prevents the germ entering the body.

1. As to how this can be accomplished a knowledge of the germ and its nature will help answer.

The germ of consumption is different from all other germs in that its growth is very slow, requiring weeks or even months for full development. It requires a special temperature for growth—namely, between 99° and 102° F.—and also can not grow without a requisite amount of moisture.

While these points are true, it possesses a still greater peculiarity: namely, that it can live a great length of time—weeks, months, or even years—in a dried condition.

While heat and sunlight are destructive to the organism, drying has little effect, and it is at this point that a third statement may be made—that is, the germ, the source of infection of consumption, passes out from man by the sputum, and it is this dried sputum that furnishes the greatest source of danger.

Do not understand me as stating that this is the only way by which tuberculosis can be transmitted, for it is not; but it is the most common means by which pulmonary tuberculosis, commonly known to the laity as consumption, is transmitted.

It is impossible for any germ to leave a moist surface and be carried off by currents of air, and for this reason the breath of consumptives is harmless in that it does not contain the germ.

The point is now suggested, In what way are the practical results to be accomplished? Certainly not by the use of the poison tuberculin, which at one time created such a stir and has since been so thoroughly condemned. Yes, to a certain extent by that means—that is, by the tuberculin test for the detection of tuberculosis in cattle—but furthermore by any means by which the presence of tuberculosis, of which consumption is a form, can be detected.

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* Read before the Buffalo Society of Natural Sciences, October 25, 1895.

If the existence of consumption in a certain individual is known, and if that individual is conscientious and exercises proper precautions (which are not harassing or painstaking), there is no reason why consumption should be given to a single other person.

It is not an hereditary disease, and always must arise from some source previously infected, and it is in reference to a most common means of furnishing infected sources that I wish to lay stress to-night—that is, the vile habit of expectorating on the floors of street cars, public buildings, and similar places.

2. A short time ago the Buffalo Railway Company adopted a rule looking to the prevention of expectoration on the floors of their cars. There was placed in each car a sign reading to the effect that "Spitting on the Floor of this Car is Positively Forbidden," and the result of the display of these signs was the lessening, to a small degree, of the expectoration on the floors of the cars. The move was one in the right direction and should be highly commended; but company rules of this nature are difficult to enforce without stronger legislation back of them, and some measure should be adopted to aid the company in its efforts toward better street-car sanitation.

Where is there a more common place for the spreading of such infection than the floors of street cars? The sputum becomes dried, mixed with dust, and is easily disseminated by currents of air, and is either inhaled or swallowed, and it is reasonable to suppose that several of the five hundred persons reported to the department of health as having died from consumption last year received their primary infection from this source.

During the year 1894 over 42,500,000 passengers were carried in some 2,700 cars by the Buffalo Street Railway Company, and one can appreciate by this number the very considerable amount of dried expectoration that must necessarily have been inhaled.

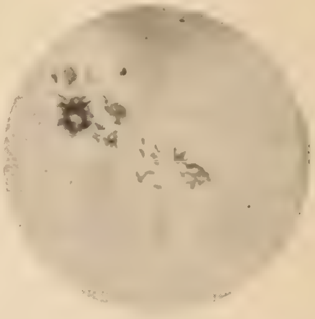
Take, for instance, a man returning for the first time to his place of business after having been "laid up" with a severe attack of an acute bronchitis. It is fair to suppose that owing to his still weakened condition he will resort to the street cars as a mode of transportation, and must necessarily inhale the air of the car. If this air chances to contain tubercular-infected dust, one can readily imagine the great danger to which he is exposed.

With few exceptions, very little work has been done to practically demonstrate the possibility of street-car sputum infection, calculations having been based on the fact that the tubercle bacillus is usually present in the sputum of consumptives, and undoubtedly among the number that ride on the street cars annually there are several hundred persons suffering from the disease.

This point has been demonstrated to be a fact, for during the past few months fifty-six microscopical examinations have been made of selected samples from the floors of cars at the foot of Main Street, and four of these examinations revealed the presence of the germ of consumption.

I draw attention to one mount, of which I furnish a photomicrograph. The photograph shows a clump of tubercular organisms numbering in the hundreds, the sample having been collected from a Cold Spring car.

The question now arises, How can the contamination of cars by tubercular sputum be prevented? In the same manner that contamination of theatres, churches, public buildings, and similar places can be prevented, and that is principally in two ways:



First. By educating the public in general as to the danger of indiscriminate and careless expectoration.

Second. By the passing of a city ordinance prohibiting the expectorating on the floors of cars, public buildings, and similar places.

3. The medical officer of health at the present time is neither aided by public opinion nor statute in any attempts he may make to stop the propagation of consumption, and, although it is clear to the medical and scientific world that tuberculosis is an infectious or communicable, and not a hereditary, disease, before legislation could possibly be obtained on this subject it is necessary to educate the public at large.

With the object in view of educating the public as to consumption, on the 10th day of June, 1895, the Department of Health in this city mailed the following circular letter to the physicians of the city:

Department of Health, Buffalo, N. Y., *June 10, 1895.*

Dear Doctor: You are aware that tuberculosis is strictly a contagious disease, and can be prevented, providing the proper sanitary regulations be adopted. Therefore, after June 15, 1895, the Department of Health, in the interest of the public safety, demands that all cases of pulmonary tuberculosis (consumption) occurring in your practice be reported to this office, whereupon a circular of instructions will be sent to the family, or those in charge of such patients, with the object of lessening and preventing the spread of this dire complaint.

Whenever the diagnosis as to the existence of the disease is in doubt, you are most respectfully requested to submit to the bacteriological bureau of this department the sputum of such cases for a bacteriological test, which will be made free of charge. The report of this examination will be sent you by mail. Yours most respectfully,

Ernest Wende, M. D., *Health Commissioner.*

The circular of instructions referred to is as follows:

Department of Health, Buffalo, N. Y.—*Information for Consumptives and those Living with Them.*—Tuberculosis, commonly known under the names of consumption, decline, scrofula, wasting disease, lupus, and white swelling, is a contagious disease, which means that every new case is contracted from some other case. It is not an inherited disease, nor is it due to "a cold," as once supposed, and these facts furnish the keynote of how to prevent the disease. The cause of tuberculosis is a germ, called the *Bacillus tuberculosis*, and the disease is only produced by it. The germ is commonly found in the sputum (spit) of those having consumption, and in the pus (matter) discharged from tubercular sores of all kinds. This tubercular germ finds its way into a healthy person principally in three ways:

1. Through the lungs.
2. Through the stomach and digestive tract.
3. Through open wounds (sores).

1. *Through the Lungs.*—This is apt to occur when an ordinary pocket handkerchief is used by a tuberculous person to receive expectoration (spitting)—a filthy and dangerous habit. When such a handkerchief is opened the dried expectoration becomes pulverized and is disseminated through the air, from whence it may be inhaled by others as well as by the patient himself, who is likely to suffer from drawing the diseased germs into portions of the lung previously unaffected. Another and most common source of pulverized expectoration is derived from the disgusting habit of indiscriminate and careless spitting, as on the floors of street cars, churches, theatres, large stores, public buildings, etc., and on the ground and sidewalks. The expectoration (spit) becomes dry, mixed with dust, and in this form is carried into the air and blown around, then inhaled into the lungs or swallowed. This spitting habit is dangerous in the extreme and should not be practised.

2. *Through the Stomach, etc.*—This occurs generally by consumptives swallowing their own sputum, and by the use of spoons, cups, and other articles of the kind, which have not been properly cleansed after having been used by a tuberculous person or consumptive. Tuberculous meat, and milk from tuberculous cows are also a great source of danger, and should not under any circumstances be used.

3. *Through Open Wounds* (*Cuts*).—This happens by persons getting tubercular pus (matter) into an open cut or an abrasion on the skin, and is probably the least common of the three usual ways of infection.

During the past ten years Buffalo, with a population of 250,000, has had 5,166 deaths reported as from consumption.

The probabilities are that this is by no means the entire number due to that disease, as certificates are not infrequently falsified in order that relatives may obtain insurance, which they otherwise could not, were the true cause of death known.

The means of preventing the spread of consumption rests mostly with persons having the disease. If they exercise proper precautions, which are not difficult nor exacting, they can in a great measure avoid giving the disease to others, and yet not be deprived of the society of their friends nor of any of the comforts of life.

Knowing the channels of infection, which have been stated, the necessary precautions can easily be taken.

All sputum (spit) from consumptives should be destroyed, and must not be allowed to become dry. A spitting cup, or flask, containing just enough disinfecting solution (which can be made by adding eight drops of carbolic acid to half a cup of water, or by dissolving a tablet of bichloride of mercury, such as may be procured at any drug store, in a pint of water) to cover the bottom of the vessel should be used for expectoration. When out of doors a consumptive should use a pocket spitting flask containing the disinfecting fluid. If this is impossible, a piece of old cotton cloth or water-closet paper should be used to spit into, and such cloth or paper destroyed by fire as soon as possible after using. No piece should be used for more than one expectoration.

Never spit on the floors of street cars, public buildings, stores, etc., nor on the ground or sidewalks, as such sputum becomes dried, is blown about, and furnishes the source of danger above referred to. There is little danger from the mere breath of a tubercular patient; the danger lies in the dry expectoration, which contains the contagious or infecting germ.

Kissing consumptives is a positive source of infection, and should be guarded against, especially in the case of children. Married people should not sleep together where either is infected. Sleeping in rooms occupied by tuberculous persons is a source of danger, and such rooms should not be used by other persons after having been occupied by consumptives until they have been thoroughly disinfected and all material in them put through the same course. Rooms can practically be disinfected by the use of the fumes of burning sulphur (using three pounds of sulphur to a room ten feet square, and increasing the amount according to the size of the room in proportions of three pounds to each additional thousand cubic feet of air space), the room during the time being tightly closed, and allowed to remain so for at least twenty-four hours. The woodwork, walls, wooden parts of bedsteads, chairs, etc., should be washed with a solution of bichloride of mercury (the proportions of which have been given above). For bed springs, etc., a solution of carbolic acid should be used, as mercury will injure the metal.

All dishes, spoons, forks, etc., should be thoroughly washed in boiling water after having been used by a consumptive, and such articles should not be used by any other person in the household until they have been thoroughly boiled.

All meats should be thoroughly cooked, and milk sterilized or boiled, if it is thought to be from a diseased source.

The bedding and clothing used by a consumptive should not be included in the family wash; such articles should be washed separately, and be thoroughly boiled during the process of cleansing.

ERNEST WENDE, M. D., *Health Commissioner.*

As to the second point—that is, legislation on the subject—nothing has as yet been accomplished, and it is with the object in view of demonstrating the importance for legislation that I give this paper to-night. A movement of this sort needs the hearty co-operation of every person interested in public health, and until such an ordinance is in existence the spreading of consumption by infected dust from the floors of street cars, public buildings, and similar places will continue.

After a lengthy discussion of this paper, as to the practicability of legislation prohibiting indiscriminate expectoration, the following resolution was submitted to the society, for action, by the chairman, and seconded by Mr. David F. Day, of the Park Commission of the City of Buffalo:

SOCIETY OF NATURAL SCIENCES, LIBRARY BUILDING,
BUFFALO, *October 25, 1895.*

Resolved, That matters pertaining to public health are within the province of this society as a scientific problem for discussion. That it has been demonstrated that dust is a means of spreading contagious diseases, and

That this society requests that the various medical societies of the city be invited to unite in arranging some plan by which contagion from expectoration be abated as a well-known nuisance.

That the board of health be requested to give the matter attention and aid in a suitable statement of this source of danger.

Adopted by a unanimous vote.

References.

1. Wordin. Tuberculosis: Its Restriction and Prevention. *American Public Health Association Journal.*

2. Bissell. Tubercular Infection in Street Cars. *Buffalo Medical Journal.*

3. Wordin. Tuberculosis: Its Restriction and Prevention. *American Public Health Association Journal.*

Corner of Normal and Porter Avenues.

THE PROGNOSIS OF MALIGNANT TUMORS
AS MODIFIED BY THEIR EARLY DETECTION AND PROMPT ABLATION.*

By J. W. S. GOULEY, M. D.,
SURGEON TO BELLEVUE HOSPITAL.

The nature and treatment of tumors can not be too frequently discussed, because improved methods of study and of cure are almost invariably evolved from such discussions, and because intelligent lay readers of these dissertations will not fail to accept well-founded conclusions, and partly through them the general public will be made aware of the danger of procrastination of radical treatment of tumors. Thus great sufferings will be mitigated and countless lives prolonged. Many phases of questions relating to the early detection and prompt radical treatment of morbid growths, together with the establishment of the prognosis, are likely to be closely scrutinized by the inquirers appointed for this purpose, and information of much value may be expected as the outcome of their collective investigation.

Uncertainty in the determination of the nature of certain morbid growths, the strife for an accurate diagnosis before ablation, and the consequent long delay in arriving at a final conclusion, due sometimes to difference of opinion among consulting physicians, have in many instances caused patients to wait until innocent tumors became malignant. Therefore it seems rational to advise early excision of all accessible tumors as soon as discovered, deferring the completion of the diagnosis by the aid of the microscope until they shall have been extirpated. The knowledge of the metamorphic tendency of tumors is sufficient to warrant the excision of growths believed to be benign even in the earliest period of their development. Mott, Stevens, Watson, Wood, and many other eminent physicians of the past generation, seldom expressed a positive opinion of the nature of particular tumors until they were excised, and commonly answered, "It is a tumor, and should be removed." After dissecting the excised growth they were generally able to form a notion of its character and establish the prognosis.

The published results of great numbers of cases have shown that the prognosis of malignant tumors is markedly modified by their early ablation, and it is well known that when tumors are excised in their incipiency the period of immunity from recurrence of the disease is often prolonged many years, this long immunity being regarded as equal to a cure by physicians of large experience. These happy results have been attained in cases of sarcoma as well as of carcinoma. The writer's clinical and histological study of tumors during many years has led him to believe that the vast majority of external malignant tumors were developed as benign growths which, by a retrogressive process in their structure, became malignant. He therefore long ago began to act in accordance with the belief that scarcely any external tumor is too small to be excised. The number of favorable cases illustrative of the propriety of early excision of tumors, whether benign or malignant, appears to be increasing rapidly, owing probably to the more general belief than formerly that benign tumors are liable at any moment to become malignant; and the practice during the last two decades of excising tumors tending to retrograde metamorphosis demonstrates that this prompt action has had the effect in many instances of greatly prolonging the period of immunity from recurrence of the disease.

The very widely promulgated irrational idea that "so long as a tumor is not painful and is not rapidly increasing in size it should not be extirpated," although now rejected by the majority of physicians, still lingers in the public mind. It therefore becomes the duty of every physician to inform his clients of the danger they incur by neglect, or by submitting their cases to the baneful devices of charlatans. It is gratifying to record that many physicians are striving to educate the people respecting unnatural growths upon the body, and are pointing out to the afflicted the risks of allowing tumors to attain inordinate dimensions before taking advice.

Although the early removal of malignant growths does not invariably increase the chances of cure, it seems in many cases to prolong life and render it tolerable, particularly when the tumor is excised as soon and as often as it recurs; and in some instances it has been known to postpone recurrence for long periods, if not indefinitely. The citation of a few cases will suffice to illustrate these propositions:

In the year 1877 the writer excised from the chin of a young man a spindle-celled sarcoma measuring one centimetre in mean diameter. The wound healed soundly, and no growth ever recurred in that situation. In about six months a tumor made its appearance in the lumbar regions and was promptly removed, but soon reappeared in the scar; this was also removed, and in the course of two years seven cutting operations in all were performed. At length a newly developed tumor grew rapidly and in a few months attained an enormous size, occupying both lumbar regions, extending to and even encroaching upon the thorax. The patient was then in such an unfavorable condition that further surgical interference was declined, and he soon died. The fatal issue was delayed, probably, by the repeated operations performed as soon as a new growth appeared. The case of sarcoma recorded by Dr. Valentine Mott is a good example of prolongation of life by repeated operations, fifteen of which were performed upon that patient during a period of twenty-three years. Dr. Gross's case of recurring sarcoma is another example of the benefit conferred by early and frequent extirpations—twenty-three in four years—the patient being in good health ten years and four months after the last operation.

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* Read before the New York State Medical Association, October 16, 1895, as part of a discussion on The Prognosis of Malignant Tumors as modified by their Management.

The writer's case of "giant-celled" sarcoma of the right mammary gland is an additional example of a long period of immunity. The operation was performed in 1874. The disease recurred above the scar, and in 1882 was promptly extirpated. The patient is still in good health, twenty-one years after the first operation.

Ten cases of carcinoma, previously reported by the writer, show an average of a fraction over nineteen years of immunity from recurrence after excision, which was performed during an early period of their development in six cases, and later in four cases. The case recorded in the writer's paper of 1888 as Case V is worthy of a second mention :

> The patient, whose left breast was excised for a "scirrhous cancer" twenty years before, sought the writer's advice on account of the appearance of two hard nodules in the old scar. These nodules were excised on the 29th of January, 1885. The wound, after being seared with the thermo-cautery and covered with a layer of cotton, was left to granulate, and was completely healed in four weeks. There has been no sign of recurrence of the disease, and the patient is in excellent health at this date—ten years and nine months since the last operation. The microscopical examination of the two nodules showed them to be typical carcinomata with a profuse fibrous matrix. In the beginning of 1893 the writer excised a large ulcerated carcinoma of the right mamma, which was threatening the patient's life by occasional profuse hæmorrhages. The sloughy, bleeding surface was four inches in mean diameter, and the exhalation therefrom was extremely offensive. The operation was performed with the sole object of preventing death from hæmorrhage, but the wound healed primarily, and the patient is now in apparent good health. This is one of the cases of late excision in which recurrence of the disease has not been manifested after more than two years.

That benign and malignant tumors—inomata, sarcomata, and carcinomata—do sometimes exist in the same individual as distinct growths has been repeatedly demonstrated. Mr. Bryant, of London, records a remarkable example of this occurrence in a woman sixty-four years of age, who was affected with a "lipoma" over the left hip, a carcinoma of the left breast, and a sarcoma of the right breast. He removed the right breast, and in about six months the disease recurred in the scar. In the course of four years and a half from the first operation sarcomatous growths recurred sixteen times, and sixteen operations were performed for their cure. At last accounts the patient's general condition was good. The "atrophic" carcinoma of the left breast and the "lipoma" of the hip were not excised. May not cases of this sort be profitably utilized in the study of the question of metamorphosis of tumors? May there not have originally existed in this case an adenoma of each breast, one tumor undergoing carcinomatous transformation by excessive epithelial-cell proliferation, and the other undergoing sarcomatous transformation by excessive endothelial cell proliferation?

It is of prime importance to strive to eradicate from the minds of some physicians the ill-founded opinion that "extirpation of a quiescent malignant tumor only serves to stimulate the extension of the disease." It is likely that this opinion originated from the observation of the bad results of incomplete excision of tumors, or their superficial cauterization with nitrate of silver, arsenical pastes, or other escharotics, all of which procedures are well known to have this effect of stimulating the extension of the disease; while complete excision removes the whole of the local disease and surely prolongs the period of immunity.

A point worthy of very special consideration in connection with the question of early extirpation of tumors is the necessity of the clearest conception of the modes of transformation of benign into malignant tumors. If this be well understood, and if it be realized that no time can be fixed precisely when such transformation begins, then the vast importance of early extirpation will be acknowledged and acted upon by all who may have had doubts on this vital question.

Although the recognition of the metamorphosis of tumors dates back to the Galenists, nothing save a vague and irrational exposition of this transformation appears in their, and much later, writings. Attention to this question was recalled by Sir Astley Cooper, who, however, gave no explanation of the conversion of benign into malignant tumors, saying no more than that this change in the character of tumors in women occurred after the cessation of menstruation. It is only since the great advance of embryology and of patho-histology that tumors began to be specialized in accordance with their derivation and structure, and since the nature of regressive morbid processes began to be better understood, that the right interpretation was given to the metamorphosis of new growths. These preliminary labors have led to the demonstration that an external benign adenoma sometimes receives an accession of leucocytes or of endothelial cells which retain a low organization and thus becomes a sarco-adenoma which is malignant; that oftener the leucocytes or the endothelial cells attain a higher degree of organization and are developed into fibrous tissue, when the tumor becomes an ino-adenoma which is benign; that in another adenoma there has occurred such an excessive proliferation of embryonic epithelial cells as to break the bounds of the acini and tubes of the diseased gland, thus transforming it into a carcinoma which is malignant; and that a fibrous tumor of long standing may become a sarco-inoma by a great accession of young cells which retain their dwarfish character. Many examples might be cited of such fibrous tumors excised in the beginning of their transformation into sarcomata. In some of these cases it has happened that the greater part of the tumor was benign and the remainder malignant. A few months ago the writer excised from the left cheek of an elderly gentleman a tumor of about a centimetre in diameter, found to be an adenoma of the sebaceous and sweat glands undergoing epitheliomatous transformation, which involved about a third of its bulk, judging from the extent of the epithelial proliferation. The prognosis is therefore favorable at least for a long period of immunity.

The long time in which some mammary growths remain stationary and apparently harmless, and the final transformation of these tumors into carcinomata or sarcomata, have naturally suggested that they were originally diffuse adenomata, whose existence has, however, been denied by good observers. Since the opportunity has seldom occurred of examining such tumors microscopically, on account of their being very rarely removed during the stationary period, a doubt has existed in many minds whether mammary carcinomata or sarcomata can be regarded as metamorphosed, circumscribed, or diffuse adenomata. Although the existence of diffuse adenomata has been repeatedly demonstrated by high authorities in this field of labor, a good additional example may be worthy of record:

Early in November, 1892, a case of mammary enlargement presented itself at St. Vincent's Hospital. The patient, not over twenty years of age, had noticed the gradual and uniform increase of her right breast in the course of a year, the left breast being apparently sound. The writer was asked by Dr. Charles Phelps to see the patient, and agreed with him on the diagnosis of diffuse adenoma, and advised immediate operation. The entire breast was excised, and on careful microscopical examination proved to be a diffuse ino-adenoma, the proportion of fibrous tissue being very slight. Five months afterward the patient returned on account of uniform increase of the left breast, which was removed by Dr. Phelps, and which also proved to be a diffuse ino-adenoma.

It seems fair to assume that in this case procrastination would have been dangerous, since carcinomatous or sarcomatous metamorphosis is so likely to occur in neglected cases of adenoma.

Careful observations made by independent workers at the bedside and in the laboratory have furnished some of the most important information toward the establishment of the prognosis of malignant tumors, notably that carcinomata containing an excess of fibrous tissue are less malignant and more amenable to treatment than the so-called encephaloid cancers, which contain very little fibrous tissue and are developed with great rapidity; that large-spindle-celled sarcomata are less malignant than small-round-celled sarcomata, which are the most malignant of all endothelial growths; and that the lower the organization of tumors the greater is their malignancy.

But there remains for examination the question of progression from malignity toward benignity. For the consideration of those who may wish to make further researches into this subject, it is proper to note that since benign tumors, by regression, are transformed into malignant tumors, it is not unlikely that malignant tumors, by progression toward a higher organization, are sometimes transformed into benign tumors, or at least into tumors which remain quiescent for long periods of time. The behavior of the so-called "atrophic carcinomata" appears to justify this view. The tumors named atrophic carcinomata, because of their tendency to decrease in size, to contract like scar tissue owing to sclerous degeneration of their fibrous tissue, are rightly regarded as less malignant than other forms, and often last many years without involvement of lymph glands or doing any mischief whatsoever. The probable reason why, in these "atrophic carcinomata," the lymph glands are not implicated is that it can not be easy for the embryonic epithelial cells to multiply and migrate owing to their being, as it were, imprisoned in the sclerotic tissue. Ulceration only can set them free to diffuse themselves. Thus an adenoma, at the time of greatest proliferation of its epithelial cells, at the very time of its transformation into a carcinoma, may receive an abundant accession of endothelial cells which rapidly progress into fibrous tissue, greater in amount than the epithelial cells, the fibrous tissue soon undergoing sclerous degeneration. Such may be the right explanation of the origin and apparent harmlessness of "atrophic carcinomata." What may be the exact excitant of this progressive metamorphosis and of the subsequent sclerous degeneration—of this effort of Nature to effect a cure—has not yet been ascertained. The writer has seen cases of long standing "atrophic" mammary carcinomata in women up to ninety years old, and believes that, except in feeble and very aged patients, excision of the growth should not be delayed, otherwise the internal organs eventually become involved, particularly after the occurrence of ulceration.

Metamorphosis progressing toward the higher development of the cell element into fibrous tissue, followed by sclerous degeneration, appears to occur also in sarcoma. An interesting example of this sort is under observation.

The patient is an Italian actor, thirty-nine years of age, from whose neck a sarcoma was excised ten years ago. The disease reappeared in the scar, and a second operation was performed about five years ago. In a short time after this second operation a tumor appeared also in the scar, and the case was treated by Dr. Coley with injections of erysipelas toxine for several months. About two years ago the writer was first consulted by the patient, who then had, in the scar of the second operation, a tumor which was so blended with the deep tissues of the neck that it was regarded as "inoperable," but likely to remain stationary. The patient returned on the 31st of July, 1895. The tumor then appeared to have decreased in size, but was extremely hard and immovably fixed near the middle of the right cervical region. This man, originally well nourished and stout, was then pallid and emaciated, but no more so than when seen two years before.

The case appeared to be a fair example of transformation of a sarcoma into an inoma with sclerosis of the fibrous tissue. Whether the treatment by injections of erysipelas toxine caused this higher development of the endothelial cells into fibrous tissue, and also caused sclerous degeneration of the newly formed fibrous tissue, or whether these changes were effected by some other excitant, are questions which may be answered only after the analysis of many carefully and long-observed cases. Any treatment insuring the fibrous transformation and sclerous degeneration of inoperable tumors will surely be hailed as a great and marvelous advance in the art of therapeutics.

The following is a brief summary of some of the results of a re examination of questions pertaining to the frequency, formation, nature, and treatment of certain tumors, as helpful in the establishment of their prognosis:

1. According to the statistics published during the past thirty years, malignant tumors appear to exceed benign tumors in frequency. This is not unlikely to be owing to the fact that benign tumors have not been more generally

excised in the early period of their development, but have been allowed to become malignant.

2. While some external malignant tumors were never benign, it seems that many external benign tumors become malignant, and that some external malignant tumors tend to become benign.

3. It does not seem irrational to regard a benign tumor as potentially malignant, and *vice versa*, since it contains all the essential elements which, perhaps, some accident awakens into activity.

4. The vast majority of external carcinomata and sarcomata of the mammary glands seem to be developed from diffuse and circumscribed adenomata.

5. The often reiterated dictum that "so long as a tumor is stationary and causes no inconvenience it should not be removed," is contrary to true principles of conservatism and is fraught with the greatest danger to sufferers.

6. The ill-founded opinion that "extirpation of a quiescent malignant tumor only serves to stimulate the extension of the disease," has prevented the early ablation and therefore the cure of many tumors, and is responsible for the great mortality due to procrastination.

7. The early excision of malignant growths does not invariably increase the chances of cure, for there are cases of very small tumors which were promptly removed and which recurred so speedily and soon attained such dimensions as to be inoperable. This is particularly the case with small-round-celled sarcomata and with multiple "melanosarcomata."

8. The early excision of certain sarcomata and carcinomata very frequently modifies favorably their prognosis, the period of immunity from recurrence of the disease being prolonged sometimes indefinitely.

9. As soon and as often as a tumor recurs it should be excised. Cases illustrative of the good effects of this practice are rapidly increasing in number.

10. The early excision of external benign tumors may often be regarded as prophylactic of malignant disease.

11. Scarcely any tumor is too small to be excised.

12. In the case of a malignant or of a suspectedly malignant tumor, it is imperative to excise not only the morbid growth, but also the apparently normal ambient connective tissue and lymph glands, to carry the dissection far beyond the diseased tissues, and to take measures likely to insure rapid cicatrization of the wound.

13. Applications of nitrate of silver, of arsenical pastes, and of other escharotics to many tumors, have generally proved worse than useless, and have been known to excite the rapid extension of the local disease, and in the case of malignant tumors to cause their propagation to the internal organs, leading speedily to a fatal issue.

14. The value of constitutional treatment after the excision of malignant tumors is unquestionably great. This treatment generally consists in the use of reconstituents, and of such other means as may be needed in the endeavor to re-establish and preserve the equilibrium of the bodily functions. None of the internal medicines proposed and given as specifics against malignant cancers have ever been of any service.

INFANTILE SCORBUTUS.*

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The few suggestions contained in this paper will perhaps serve the purpose of introducing a subject for discussion which is eminently worthy the careful consideration of scientific men, and are prompted by the notes of a unique case which has recently presented itself in my experience.

Scorbutus or scurvy is a disease due essentially to perverted nutrition, and is supposed to depend for its characteristic manifestations upon an altered constitution of the blood, although the exact pathological change has not been fully determined. An absence or diminution of the salts of potash has been ascribed as a prominent factor, but it is evident that other elements are involved. And while the most careful chemical, microscopical, and bacteriological examinations of the blood of scorbutic patients fail to satisfactorily account for the phenomena observed, yet it is an established fact that the condition results from a long-continued diet which is deficient in some of the nutritive elements.

In the adult the disease most commonly prevails under conditions which are calculated to prevent an adequate supply of fresh animal and vegetable substances, associated with long exposure to cold, trying experiences, hard work, and depressing mental states—as in long and severe army and naval campaigns, among sailors during long cruises in the arctic seas, and in general mal-hygienic conditions.

Infantile scorbutus, the subject which more particularly concerns us at this time, occurs in children which are improperly nourished, either by the administration of foods which are unsuitable, or the long-continued use of artificial foods which are deficient in some essential element. It is a disease of comparatively rare occurrence—so rare, indeed, that some of my hearers may be disposed to question the accuracy of my diagnosis when I say that the thoughts herein presented were suggested by observations made during my attendance upon a case which presented all the characteristics of the disease. But, if I have made a mistake, I am willing to be convicted of error, and, with your permission, will briefly detail my experience. Before doing so, however, I wish to call your attention to some of the more pronounced features of scorbutus as it appears in infancy.

It occurs most commonly in children during the latter half of the first and the whole of the second year, and is characterized by a peculiar tendency to subperiosteal hæmorrhage, particularly of the femora and long bones, hæmorrhages into the muscles and even into joints, as also into mucous membranes, the gums being most commonly affected, and that part of the membrane immediately surrounding the teeth. It has also been observed that where no teeth have been erupted the gums are very rarely involved. The subject of scorbutus is usually anæmic and presents all the evidences of a serious cachexia, with possibly the single exception of emaciation. He sweats profusely, and the beads of perspiration often stand out prominently about the forehead. The temperature may at times be raised slightly, although this is not a prominent symptom, and is often entirely wanting. The complexion assumes a peculiar earthy color, and the skin is rough and unhealthy in appearance. The expression becomes anxious and painful. As the disease advances the affected limbs become swollen and exquisitely painful, especially near the ends of the shafts of the long bones, and there is a tendency to the separation of the epiphyses. The least touch of the affected limb elicits the most agonizing cries; and this exquisite sensitiveness, due undoubtedly to hæmorrhages beneath the periosteum, causes the child to assume a peculiar and almost characteristic attitude—upon the back, with legs partially flexed. He does not make any voluntary movement of the affected parts, a condition known as pseudo-paralysis, but which is not due to any loss of power over the muscles; and the position is rigidly maintained because it is the position which affords him the greatest ease. He does not, if left alone, appear to suffer much pain, but he watches every movement made with an anxious eye, and protests vigorously against the slightest touch or the least effort made to change his position.

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* Read before the Hartford Medical Society, November 18, 1895.

My little patient was born on New Year's morning in the year 1894. As it was soon discovered that he was to be deprived of the natural source of food supply, it became necessary to look about for other means of subsistence. Cow's milk and water, with the addition of a little limewater, was substituted, but this he was unable to retain and assimilate, and while at birth a frail and delicate organism, afflicted with congenital hernia and phimosis, it may readily be conceived that his condition rapidly assumed a very critical aspect. I will not weary you with a recital of the experiences through which we passed in the following months. You have all been through it time and again in your efforts to discover some means of maintaining the life of a little patient in imminent danger of starvation, when neither food nor medicine could be retained long enough to exert any beneficial influence. Suffice it to say that he continued to shrink until he presented a typical picture of infantile debility and inanition. His bowels were loose and he moaned piteously as if in constant pain; and as the warm weather approached we hardly dared to entertain a hope that he would survive. Changes of diet and medicine failed to ameliorate the condition, until at length malted milk and bovinine seemed to exert a beneficial influence, and we detected slight evidences of improvement. He was taken away into the country, and on this diet he continued to improve until he became well nourished and apparently healthy. All his old ailments disappeared and he gained rapidly in weight, and, naturally enough, his mother had acquired an unbounded confidence in the artificial food which had apparently rescued her offspring from an untimely death, and so it was continued without change during the summer. Indeed, as I was not continuing my visits, I entirely lost sight of the fact that malted milk constituted his exclusive diet.

When next he came under my observation he was about nine months of age, and his mother thought he had rheumatism, an opinion in which I was at first disposed to concur. His legs below the knees and just above the ankle joints were swollen. His expression was anxious and painful. He lay upon his back with the legs partially flexed, and so painful that you could not touch them—indeed, you could not look toward him or move in his direction without eliciting the most vigorous protests. He was plump and apparently well nourished, and at no time did there appear to be much fever. He was placed upon antirrheumatic treatment—salicylate of sodium and syrupus ferri iodidi. His condition did not improve during the next few days. The legs continued to swell and became more uniform in size between the ankle and knee, and his skin assumed a peculiar dark and rough appearance. Later his gums became sore, and immediately around the teeth blebs formed, which were filled with bloody serum and bled freely when incised. The gums beneath looked purple and sloughy. This directed my attention in another channel, and I suspected that I had something more than rheumatism to deal with. Afterward a careful examination discovered a few dark purple spots upon the legs. The gums continued to slough, the breath emitted an offensive odor, the skin was dark and earthy, and I arrived at the diagnosis of infantile scorbutus, although I had never seen a case—never known of a case—and the literature of the subject had never before possessed any particular significance to me.

Inquiry into the matter of diet revealed the fact that it had not been changed except by dropping the bovinine, and malted milk still constituted the sole article of diet. This was immediately discontinued and fresh cow's milk substituted, with the addition of juice expressed from rare steak. He was given pieces of orange, of which he seemed extravagantly fond, and iron and cod-liver oil were administered. The gums were rubbed with tincture of myrrh.

The improvement which occurred during the next three or four weeks was simply marvelous, and he has since remained and is to-day a robust, healthy, and unusually well-nourished child.

I am inclined to think from the observations recorded, the characteristic development of unusual and peculiar phenomena, the treatment pursued, and the results obtained, justify the diagnosis of infantile scorbutus; and demonstrate that this somewhat uncommon disease may be developed, and that conditions may obtain which favor its development, even while the patient is surrounded by the greatest abundance and variety of nutritious substances, the absence of which is generally conceded to be the predisposing cause.

In looking up the literature of this subject, which, by the way, is not very voluminous and mostly of recent date, I found in the *New York Medical Journal* of May 26, 1894, a very valuable article, contributed by Dr. Northrup and Dr. Crandall, giving the results of an autopsy in the case of a child which came under the observation of Dr. Northrup in 1889, and which he admits, with commendable frankness, died on account of improper treatment and in consequence of his failure to correctly diagnosticate the disease. This, he asserts, "was the first case of undoubted scorbutus in an infant recorded in the medical literature of the United States." Two years later, in 1891, a second case was met with; and on investigation it was found at that time that the surgeon-general's office could furnish but a single possible and not typical case. Up to the date of writing the article above referred to (May, 1894) he had succeeded in obtaining the detailed histories of thirty-six cases, which he presents in a very interesting form, and which constitute probably the most valuable addition to the literature of the subject.

Perhaps it may be desirable, in this connection, to consider briefly the causative agency of artificial foods in the production of the disease under consideration.

We are all fully aware that no single element which enters into the constitution of the body can be eliminated from the diet without the development of disastrous consequences; and it has been demonstrated that an individual entirely deprived of the single element, salt, would languish and die from starvation. A mixed and varied diet, containing all the elements which enter into the composition of the body, is therefore indispensable in the maintenance of life, and from which the various tissues of the body select from the blood in its circulation the particular element required, and in sufficient quantities to repair the waste incident to the vital processes, any excess being excreted and eliminated from the system.

It is not my purpose to ask you to listen to an exhaustive consideration of that old and well-worn subject of infant feeding, but rather to call attention to a unique disease, which may occasionally result from dietetic errors.

We are fully conscious of the fact that a child which from any cause is deprived of its natural food is immediately placed at a great disadvantage, and its chances of attaining adult age are very materially diminished. But, where the child can not be nursed, either from the ill health of the mother or from insufficient quantity or quality of the milk, other means must be adopted. And, while science has done much to obviate the dangers which arise from that formidable array of maladies incident to artificial feeding, and which annually results in the loss of an army of lives, no means has or ever can be devised which will compensate the advantages derived from milk fresh from the mother's breast, always maintained at a uniform and normal temperature, and uncontaminated by the disease-producing germs which find a favorable nidus for development in other foods. In the absence of mother's milk, fresh cow's milk is probably best adapted to meet the requirements; but we all of us doubtless appreciate the difficulty of impressing some mothers with the absolute necessity of sufficient care in any form of artificial feeding. And, while fresh cow's milk, with all the means at our disposal for destroying disease germs, is an admirable substitute for breast milk, it is often found to be difficult of assimilation, even when artificially predigested, sterilized, diluted, and variously modified, and we are obliged to resort to other means; and the resources of the physician are often taxed to the utmost to find anything which can be retained and assimilated in sufficient quantities to be of any benefit.

I do not wish to be understood as deprecating the value of artificial foods, as under certain conditions, where the child is deprived of its natural food, and cow's milk is not tolerated, they constitute very important substitutes, and they seem, for the time, to meet the requirements. We are able to detect immediate and essential improvement, and the little sufferers, which seem to be in imminent danger of death from inanition, thrive and become strong, healthy, and well-nourished children. But they should be regarded as only temporary expedients, which may serve to bridge over critical periods, and should never under any circumstances be continued without change for long periods. It does not follow because a child, under certain conditions, does not thrive upon cow's milk, that under changed conditions it could not assimilate it and thrive. I believe that no single article of diet, however well it may appear to agree at first, should be continued indefinitely. Mothers who have had unpleasant experiences with cow's milk or other foods, when they find an article which seems to meet the requirements, are naturally very reluctant to make a change, and are apt to continue it too long, and to this very fact is due in a large measure the development of infantile scorbutus. Indeed, I would call attention to the fact that a child which subsists entirely upon fresh cow's milk—which is doubtless the most perfect of any single article of diet, and which is supposed to contain all the essential elements—for long periods, and rejects all other food, will eventually become cachectic and exhibit evidences of some nutritive deficiency; and when deprived of milk and forced to partake of other articles of food, soon gives evidence of improvement in general condition. Assuredly, if fresh cow's milk is inadequate to maintain healthy nutrition indefinitely, we can easily understand that any artificial preparation, however closely it may approximate Nature's food, is much more inadequate to supply the demands of the system.

Now, of all the artificial foods which I have used, the one which in my hands has produced the best results is malted milk, and it is my firm conviction that it has been instrumental in saving the lives of and restoring to health many infants which had become reduced to the extreme; but, in the case which I have presented, it is apparent that it, alone and unaided, was inadequate to supply the demands of the system for an indefinite period. And, indeed, I think the same statement will apply to all artificial foods.

In the case of Dr. Whitcomb's, reported in the *Annual of the Universal Medical Sciences*, vol. ii, p. M. 11, which is almost a duplicate of my own, the patient's diet consisted of condensed milk. And in the tabulated histories of the thirty-six cases collected by Dr. Northrup and Dr. Crandall, it appears that a very large percentage of the children had been fed upon either proprietary foods or condensed milk. In only a single instance was the disease developed upon a diet of fresh cow's milk, and in that case it is not stated whether it was given alone or diluted.

Where the disease is developed, unless there is a change of diet, the result is inevitable death; but where it is recognized, and dietetic errors are corrected, the results are most brilliant and satisfactory, a few weeks being sufficient to effect a complete and perfect restoration to health.

I have not attempted to discuss the relation which exists between scurvy and rickets, but it is undoubtedly very intimate. They are both due to dietetic errors. Rickets is a disease induced by improper and insufficient food, and occurs most commonly among the children of the poor, born and reared in an unwholesome and vitiated atmosphere, where sanitary conditions do not always receive proper attention, where the surroundings are unhealthy, and where the food is poor in quality and insufficient in quantity; while scurvy occurs most frequently among the children of the well to do, where the environments are good and all the conditions apparently favorable to health.

This anomaly can only be accounted for by the fact that the artificial foods which favor the development of scurvy are often beyond the means of some, and the children who are unable to subsist upon cow's milk—such as they obtain—and such other articles of food as are afforded, die; as also that where artificial foods are recommended and tried, they are discontinued as soon as possible on account of the expense; and, I can assure you, the continued use of such proprietary foods is no trifling matter in families where the income is small.

Now, then, if both scurvy and rickets are developed in consequence of errors in diet, where is the remedy? How can they best be corrected?

At our last meeting a member of this society, in discussing rickets, made a valuable suggestion, which I hope will receive the attention which it merits—viz., the establishment of dairies which shall be conducted under proper supervision, in accordance with the Leeds system.

In these days, when the attention of medical men is directed so largely to the prevention of disease, by the establishment and maintenance of boards of health to promote the sanitary conditions under which we live, food commissions to determine the purity of food products and prevent adulteration, the destruction of tuberculous animals, and all other means calculated to promote the "greatest good of the greatest number," it seems to me this matter of regulating the conditions under which milk —which constitutes such an essential article of diet, especially of the young—is produced and distributed is one of the most important. For such measures contemplate not only the exclusion of *diseased* animals, but regulate the conditions under which healthy animals exist, determine in minutest detail the conditions under which the milk is obtained, insure its purity and freedom from deleterious matter, and the manner in which it shall be preserved and delivered to the consumer; and thus, as far as possible, exclude the germs which are recognized as the potent factors in the production of so many diseases.

Milk produced under such conditions would be healthful as well as palatable; and would, in my opinion, do more to prevent rickets and scurvy than any other means which can be adopted; and not only these diseases, but others not less formidable, such as typhoid fever and consumption. And I believe it is a plan which is thoroughly practicable, and with proper encouragement it would not be difficult to interest parties in such an enterprise who would be willing to establish and maintain sanitary dairy farms under the proper medical supervision, the milk to be sold under duly authorized seal. Surely such an article would be in demand and would command a higher price in the market, which would insure to the producer an adequate profit. And the result would be that other dealers would be compelled, for their own protection, to comply with the regulations established, and we would thus be able to procure pure milk of excellent quality which would do more to build up and strengthen the human race and prevent disease than any legislation which has been devised. I believe this system comes the nearest to solving the great problem of arresting in infants the development of disease due to improper food than any other device which has been suggested, and demands our careful consideration and earnest encouragement.

182 HIGH STREET.

SPELTER SHAKES.

By STEPHEN J. MAHER, M. D.,
NEW HAVEN, CONN.

In New Haven there are many brass foundries. For several years I have been hearing from patients of mine who worked in these foundries of a disease called spelter shakes. I have tried time and again to induce some of the sufferers who are my patients to call me in during one of the attacks; but my efforts have been futile, because the attacks were short-lived and the sufferers and their friends knew that medical help was unnecessary. I was anxious, of course, to learn how high the temperature rose and other scientific data. Therefore I feel that no apology is needed for giving a description of spelter shakes in the words of the proprietor of one of these foundries, whom I interviewed on the subject recently. He said:

"Spelter shakes? Yes. I know all about them. I have had them many a time. They attack brass molders during the pouring of a heat on cold, damp days. Spelter, you know, is what we call zinc. In the process of molding, after the zinc has been added to the copper in the furnace, the molten metal, which, of course, is then brass, is poured into the molds that the men have been preparing all day. The atmosphere of the foundry at once becomes impregnated with the fumes of the cooling metal. In clear, dry weather the cloud from the molds finds its way to the windows and skylights and other vents and escapes. In wintry, wet weather, however, the men work in a fog, as it were, of these metallic fumes. Then some of the molders, especially those who may be suffering from a slight cold, are likely to be taken with a severe chill. I have not noticed that there was any nausea or vomiting with the chill or before it. The stricken one simply feels terribly cold. His teeth begin to chatter, and he hurries up his work or hands it over to another, and hastens home and into bed as soon as possible. All the bedclothes in the place are piled on him, and he drinks unstintingly of the only and sure cure of the chill, whisky. It cures really by putting the man to sleep. I never knew of a case where the chill ended before the man went to sleep. It usually takes an hour or two from the beginning of the chill to the time of falling asleep. The chill is succeeded by a burning fever which rages almost all night. The man wakes in the morning drenched with perspiration and rather played out after his experience, but usually able to return to work at least by noon of that day. There is no repetition of the chill that day or any other day, unless the conditions that caused it in the first place are again experienced. Quinine is not taken because every brass molder knows that whisky and sleep are all the treatment required. I have never had a headache with the chill. I do not consider that one or more attacks of the spelter shakes tend to render one immune to the sickness or poisoning, or whatever it is. Almost every brass molder has had attacks of spelter shakes, although I think that they are not so common now as they used to be, because of the present superior ventilation of the foundries. None of the men in my foundry have them now, because we use in making the brass a composition metal, not crude spelter, and therefore they are not bothered much with the fumes that becloud the atmosphere in most foundries during the pouring of a heat. I have been in foundries where one could not see three feet through the oppressive and shakes-producing fog."

212 Orange Street.

The American Physiological Society will hold its eighth annual meeting in Philadelphia on Friday and Saturday, December 27th and 28th. The sessions will be held at the University of Pennsylvania and at the Jefferson Medical College. A smoke-talk will be held upon the evening of Thursday, December 26th. The headquarters of the society will be at the Lafayette Hotel, Broad Street, near Chestnut Street. Members of the society are asked to inform the secretary, Dr. Frederic S. Lee, No. 437 West Fifty-ninth Street, New York, at their earliest convenience, whether they intend to be present at the meeting and what communications they desire to make. Those who will require apparatus or other necessities for the making of demonstrations will please communicate with Dr. E. T. Reichert, University of Pennsylvania. The council has recently adopted the following resolutions: 1. That the afternoon sessions, so far as possible, be limited to demonstrations and consideration of laboratory methods. 2. That papers read before the society be limited to a length of twenty minutes, except in cases where a longer time is specially voted by the society. 3. That it be recommended to members that great detail in the presentation of experimental results be avoided. 4. That, inasmuch as there is a growing and not wholly desirable custom of allowing pupils of members to report personally upon their work, hereafter the reading of papers be confined to members of the society or to guests specially invited by the president and secretary jointly. 5. That the annual membership fee for 1895–'96 be one dollar. The following societies also will meet in Philadelphia during the holidays: The Society of American Naturalists, the Geological Society of America, the Association of American Anatomists, the American Morphological Society, and the American Psychological Association. The local committee will send soon to all members a circular giving information regarding local arrangements and railroad rates.

Pilocarpine for Aural Vertigo.—Lemairey (*Ann. des malad. de l'oreille, du larynx*, etc., t. xxi, No. 11, p. 420) has reported the case of a man, twenty-nine years old, presenting symptoms of Ménière's disease, or aural vertigo, in which relief was afforded by the subcutaneous injection of pilocarpine nitrate. A one-per-cent. solution of the drug was employed, and a sixteenth of a grain was injected daily in the morning before breakfast, the patient remaining in bed throughout the period of sweating.—*Medical News.*

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.
Published by D. Appleton & Co.
Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, DECEMBER 21, 1895.

IMPROVEMENT OF THE PHYSIQUE BEFORE BIRTH.

At a recent meeting of the Paris Academy of Medicine, a report of which is published in the *Journal des praticiens* for November 30th, M. Pinard spoke on what he called "intra-uterine puericulture." He stated that the care and medical treatment given to abandoned women who were received into the special establishments known as refuges for pregnant women had led to the disappearance of the majority of grave symptoms formerly observed in those who applied for medical treatment. During his service in one of these establishments he had noticed that the majority of the children born to women who had lived in the refuge during their pregnancy were remarkable for their development.

M. Pinard has made a comparison of the weight of the children of these women with that of the children of women who had continued to work up to the time of their confinement, and has obtained the following results: The average weight of the children of five hundred women who had continued working was six pounds; that of the children of the women who had been in the refuge for at least ten days was six pounds and a half; while that of the children of the women who had lived in the refuge during their pregnancy was eight pounds.

M. Tarnier was cited by M. Pinard as having observed the following results at the *Maternité* during a period of sixteen years: Among the children of primiparæ the average weight of 3,794 boys was six pounds and a half, and that of 3,159 girls six pounds and a quarter; in the children of multiparæ the average weight of 4,623 boys was eight pounds and a half, and that of 4,025 girls seven pounds.

M. Pinard has also made a comparison of the duration of pregnancy in the women who had sought medical care and treatment in the refuges with that of the women who had not been taken care of, by estimating the lapse of time between the last period of menstruation and confinement, and he has arrived at the following results: Among 1,000 women who had worked up to the time of their confinement, 280 days had elapsed in 482 cases, from 270 to 280 days in 279 cases, and less than 270 days in 239 cases. In 1,000 women who had lived in the refuge during their pregnancy, 280 days or more had elapsed in 660 cases, from 270 to 280 days in 214 cases, and less than 270 days in 126 cases.

We know, says M. Pinard, what is to be done in order that the period of gestation may not be interfered with, so that the development of the child may be as complete as possible, for premature birth is not to be regarded with indifference.

The foregoing figures, he said, spoke for themselves, and also showed what we had to do for the development of a strong population.

It seems that the first of these refuges was established by private munificence, and that shortly afterward the city of Paris opened one of like character, the Michelet Asylum. M. Pinard seems to have shown good reasons for hoping that they may be multiplied.

MINOR PARAGRAPHS.

THE WILHELM MEYER MEMORIAL.

The death of Professor Hans Wilhelm Meyer, which occurred last summer, has been followed by a movement of a somewhat unusual character. It will be remembered that nearly thirty years ago Dr. Meyer was the first to actually recognize the condition known as adenoid hypertrophy at the vault of the pharynx, to warn against its dangers, and to propose efficient means for its prompt and radical cure. This trouble is of such common occurrence, and the results which attend it are of such lasting and serious injury, that the importance of Dr. Meyer's discovery can not be overestimated. The effect of his teachings has been to bring urgently needed relief to many thousands of suffering children in every civilized country in the world, and it is safe to say that there is no man of our time to whom the rising generation owes a deeper debt of gratitude. It is proposed to erect a memorial statue to Dr. Meyer in Copenhagen, and to that end a definitely organized plan has been arranged and adopted, the president of each of the national societies of laryngology or otology having been appointed a member of an international committee, with the power to effect such local organization as may seem expedient, the committee consisting of one representative from each of the countries interested. The representative of the United States upon the international committee is the president of the American Laryngological Association, under whose direction the organization of a national committee has been undertaken and is now nearly completed. It is proposed to raise a fund for the memorial by small nominal subscriptions from the patients and physicians who have been benefited by Dr. Meyer's work.

THE EARLY RECOGNITION AND PROMPT TREATMENT OF MALIGNANT DISEASE.

If there is anybody in the medical profession who questions the urgent necessity of recognizing cancer at as early a period of its evolution as possible, or the equally imperative duty of eradicating it at the outset, he must find himself alone in his opinions. We believe that every physician entertains sound views on these matters. Well-founded notions, however, are not enough; they should be acted on invariably, and, as regards this particular question of the management of neoplasms, its urgency can not be too often or too forcibly impressed upon the practitioner. Seldom has that been done more satisfactorily, more convincingly, than it was in the discussion that took place at the last meeting of the New York State Medical Association. Dr. Gouley's paper, published in this number of the *Journal*, together with the summaries of what the other speakers had to say which we give in the concluding portion of our report of the proceedings, also in this number, should be pondered by every one of our readers who falls at all short of a full realization of the importance of the subject. The testimony of Dr. Gouley, Dr. Bryant, Dr. Dunham, Dr. Phelps, Dr. Syms, Dr. Wiggin, Dr. Dennis, and Dr. Stephen Smith will be found to be all to the same general purport, all setting forth in the clearest light the necessity of the early diagnosis and the prompt and thorough removal of malignant growths.

THE MEDICAL CORPS OF THE NAVY.

Two bills for the reorganization of the medical corps of the navy are reported to have been brought before the present Congress. One of them is said to provide for a surgeon-general with the rank of commodore, fifteen medical directors with the rank of captain, fourteen medical inspectors with the rank of commander, fifty surgeons with the rank of lieutenant-commander, sixty surgeons with the rank of lieutenant, and forty junior-grade surgeons with the rank of junior-grade lieutenant. The other bill is reported to provide for fifteen medical directors with the rank of captain, fifteen fleet surgeons with the rank of commander, thirty staff surgeons with the rank of lieutenant-commander, thirty-five surgeons with the rank of lieutenant, forty junior-grade surgeons with the rank of junior-grade lieutenant, and thirty assistant surgeons with the rank of ensign. Probably it is by an oversight that the second bill is reported as not providing for a surgeon-general. Assuming that to be the case, we still have to say that it falls fourteen short of providing for the number of medical officers that the first bill would establish. However, until we know more about the details of the bills we can not form an opinion as to which of them is preferable or as to whether either of them is likely to prove of benefit to the service. It is evident that something must be done to make the naval medical service less repelling to young physicians than it has been for a long time now.

A NEW MONTHLY JOURNAL.

We have received the first number of the *American Medical Review*, dated December, 1895. It is edited by Dr. Daniel Lewis and published by the R. N. Plummer Company, of New York. It is embellished with a woodcut portrait of the late M. Pasteur, reproduced from the *Review of Reviews*. The reading matter embraces sixty-four double-columned pages of the ordinary magazine size. Under the heading of The Progress of Medical Science we find numerous abstracts. There are also editorials, book notices, and various items, together with an ingenious index to noteworthy articles in more than two hundred American medical journals. We wish the *Review* the utmost success.

ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 17, 1895:

DISEASES.	Week ending Dec. 10.		Week ending Dec. 17.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	19	4	25	5
Scarlet fever	75	5	84	6
Cerebro-spinal meningitis	0	0	1	1
Measles	223	18	248	12
Diphtheria	269	32	251	39
Small-pox	0	0	0	0
Tuberculosis	96	98	79	103

Supernatural Healers.—The following is from the *Sun:*

"A new mystery-man has turned up near Boston, in the quiet old town of Brookline. He tells of performances that beat those of the Colorado miracle worker. He says that he can cure the afflicted and pull teeth at a distance by 'suggestion,' and that he has done so in more than two thousand instances. He seems to be smarter than the Jersey curists, who stop short of tooth-pulling. It seems to us that he must be a dangerous character, who ought to be taken in hand by the dentists.

"In regard to this case of Barrows we can only say what we have said in other cases of the kind, let him be brought to this town and subjected to scientific scrutiny. If he can pull the tooth of a man up in Harlem while he himself sits on a bench in City Hall Park, we promise that his picture shall be printed finely in the *Sun.* We will send a reporter to watch his Harlem victim, and two or three reporters to watch the operator on his bench under the trees that decorate the dry greensward in front of the *Sun* office.

"There has been a large accession to the ranks of the miracle-workers since Brother Schlatter turned up at Denver. We have news of them from Kansas, Chicago, New Jersey, and Boston; yet we do not seem to have any first-class specimen in New York city. We would like them all to come here and give a general exhibition in Madison Square Garden. That policeman who nabbed a solid ghost a few days ago must be excluded from the show, or else deprived of his club and nippers."

The New York Dental School.—The faculty has been completed by the appointment of Dr. R. M. Sanger to fill the vacancy created by the resignation of Dr. Hans Hecht. The faculty now consists of the following members: Dwight M. Hubbard, M. D., dean of the faculty and professor of oral surgery; Worthington S. Russell, M. D., secretary of the faculty and professor of general materia medica and of general pathology and therapeutics; Alfons Muller, M. D., D. D. S., professor of physiology, histology, and visceral anatomy; Delancey W. Ward, Ph. D., professor of physics, chemistry, and metallurgy; Charles M. Ford, M. D., professor of anatomy; John I. Hart, D. D. S., professor of operative dentistry and of dental pathology and therapeutics; Roderick M. Sanger, D. D. S., professor of prosthetic dentistry.

This, we are informed, is the first professional educational institution to be chartered by the Board of Regents of the University of the State of New York under the new laws governing charters. Under this charter the final examination for the degree of D. D. S. is conducted under the direction of the board of regents by a State board of examiners. The requirements for admission are the same as for the medical schools.

The Society of Medical Jurisprudence.—At the last meeting the special order was a paper on The Law of Libel and Slander as Affecting Medical Practitioners, by William D. Purrington, Esq., of the New York Bar.

Change of Address.—Dr. Alexander Lambert, to No. 125 East Thirty-sixth Street, New York.

Society Meetings for the Coming Week:

Monday, *December 23d:* Medical Society of the County of New York; Philadelphia Neurological Society; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Baltimore Medical Association; Cambridge, Mass., Society for Medical Improvement.

Tuesday, *December 24th:* Buffalo Obstetrical Society.

Thursday, *December 26th:* New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *December 27th:* Yorkville Medical Association, New York (private); Medical Society of the Town of Saugerties, N. Y.; Brooklyn Dermatological and Genito-urinary Society (private); German Medical Society of Brooklyn; Cleveland Medical Society.

Saturday, *December 28th:* New York Medical and Surgical Society (private).

Births, Marriages, and Deaths

Married.

McAlpin—Rockefeller.—In New York, on Thursday, December 12th, Dr. David Hunter McAlpin and Miss Emma Rockefeller.

McCorkle—Duffy.—In Ponchatoula, La., on Wednesday, December 11th, Dr. John A. McCorkle, of Vaiden, Miss., and Miss Maggie Duffy.

Watts—Mott.—In New York, on Thursday, December 12th, Mr. Stephen K. Watts, son of Dr. Robert Watts, and Miss Nellie Mott.

Died.

Brodhead.—In Walden, N. Y., on Friday, December 6th, Dr. Henry S. Brodhead.

Mellichamp.—In Bluffton, S. C., on Sunday, December 1st, Mrs. Sarah E. Pope, wife of Dr. J. H. Mellichamp.

Prioleau.—In Summerville, S. C., on Monday, December 9th, Dr. Samuel Prioleau, aged forty-one years.

Van Kleek.—In Brooklyn, on Wednesday, December 18th, Dr. Richard L. Van Kleek, aged fifty-six years.

Letters to the Editor.

IS HIGH BREEDING JUSTIFIABLE?

To the Editor of the New York Medical Journal:

Sir: In the interesting article of Dr. Charles Denison's in your issue of December 14th, there are one or two matters which, from an unprofessional point of view, seem worthy of consideration.

Without examining the *practicability* of his "rule for choice of partners to avoid consumptive offspring" (page 756), he would perhaps agree that this rule, and, in fact, the whole trend of his essay, is directed against what is termed high breeding, which, in his opinion, "becomes practically the same as inbreeding."

Now the object of this high breeding (as is the case with inbreeding in cattle) is to produce quality, and a pertinent question might be, Can quality be produced without it? Of course, by quality physical perfection alone could not be implied, as the ideas that have advanced civilization have frequently (if not most often) come from the physically imperfect—just as your highly bred Jersey, though physically a weaker cow, will give more and better milk than a tough "native." Evidently, though physical perfection is desirable, that alone can not be taken to represent quality in the human race. And, as Dr. Denison says, "it is a question of quality of offspring, not quantity."

If this quality can not be produced without high breeding, and high breeding is ultimately productive of sterility and race extinction, are not the "most civilized peoples of the globe" placed in a dilemma from which no rule for choice of partners and no comprehension of Nature's laws can rescue them? Is not their instinct to go on producing quality, even at the expense of ultimate annihilation, in the highest sense right and justifiable? How many men to whom civilization owes everything would never have been born had their parents followed Dr. Denison's rule for choice of partners?

It may be said that such cases as Lord Bacon's are so much the exception as to be worthy of no consideration; but the question is not of accomplishment, but of tendency. No generation expects to produce another *Novum Organum*, but the question of whether it is tending in the direction of scientific and artistic attainment is one that it may fitly ask itself. Unconsciously it does ask itself that question, and unconsciously it strives to be able to answer it affirmatively. As the result of this striving we have high breeding, which, though ultimately destructive to those who practise it, in the individual perfection of its product—in the direction of some particular attainment (unbalanced, if you will)—may perhaps be said to be worth its cost. LAY READER.

Proceedings of Societies.

NEW YORK STATE MEDICAL ASSOCIATION.

Twelfth Annual Meeting, held in New York on Tuesday, Wednesday, and Thursday, October 15, 16, and 17, 1895.

The President, Dr. AUSTIN FLINT, of New York, in the Chair

(*Concluded from page 569.*)

Extra-uterine Pregnancy; Death of the Fœtus; Unusual Complications.—Dr. GEORGE E. MCDONALD, of Schenectady County, reported this case, which was chiefly of interest on account of its complicated nature and the fact that the autopsy showed that all of these conditions had been correctly diagnosticated. On September 1st a woman had sought advice because of vomiting and severe paroxysmal pain in the region of the liver. A few days later, after she had experienced some shooting pains in the epigastrium, large doses of olive oil had been taken, and this treatment had been followed by the discovery of ten or twelve gallstones in the stools. She had given a history of having missed two menstrual periods, and when she had been examined shortly after there had been found a retroverted uterus and a bloody vaginal discharge. This had been followed by the passage of decidua. Thus far the diagnosis had been that of acute hepatitis, gallstones, and ectopic gestation. The next symptoms to develop had been fever, cough, and free purulent expectoration, indicating that there had been an hepatic abscess that had ruptured into a bronchus. By the following June she had recovered her health and strength. On July 19th, after excess in eating, there had been a return of epigastric pain, along with symptoms of intestinal obstruction and peritonitis. This illness had terminated fatally. At the autopsy it had been found that the fœtal remains had been situated in the right broad ligament, and had had nothing whatever to do with causing her death.

Foreign Bodies in the Œsophagus.—Dr. H. M. SILVER, of New York County, read a paper on this subject and reported several cases. He objected very strongly to the old sponge probang as an instrument that could be of little use or furnish much information regarding a foreign body in the œsophagus. The best instrument for such exploration, he said, was a *bougie à boule* provided with several sizes of bulbs and with a metal stem having graduations by which the operator could tell the exact distance of the body from the upper incisor teeth. It was dangerous, he said, to attempt to extract or push down small angular bodies with jagged edges. If a solid body of irregular shape was swallowed, it should be promptly removed by incision, as experience had shown that the prognosis depended more upon the length of time an object was impacted than upon its size. Dr. George Fischer had shown that out of twenty-eight deaths, eighteen had been caused by conditions which had been preventable. It should be remembered in exploring the œsophagus that there were two natural constrictions—viz., one at the cricoid cartilage, or seven inches and a half from the teeth; the other, at the cardiac orifice, or fourteen inches and a half from the teeth. Where the object to be reached was distant thirteen inches or more from the teeth, gastrotomy was the proper operation; if less than thirteen inches, œsophagotomy. Suturing the œsophageal wound was not essential, and if the foreign body had been long impacted, or if the œsophageal wall was infiltrated, ulcerated, or gangrenous, it should be left open. Ordinarily one or two sutures might be passed through the upper part of the external wound and the remainder carefully packed with iodoform gauze. The external wound should never be completely closed. Absolutely no food should be given for the first twenty-four hours after the operation, but if the patient suffered much from thirst this might be relieved by enemata of water. The author did not approve of rectal alimentation, considering it neither efficient nor necessary. The passage of a feeding tube into the œsophagus was both unsurgical and dangerous. After the first twenty-four hours liquid food might be given by the mouth, and its escape through the wound could be for the most part prevented by the application of a cotton compress during the act of deglutition. The operation of œsophagotomy, the author said, was now much more frequently resorted to than formerly, with the result of saving many lives. The mortality in a hundred and sixty-five collected cases of œsophagotomy was twenty-three per cent.

A Case of Carcinoma Ventriculi with the Continued Presence of Free Hydrochloric Acid and the Absence of Lactic Acid.—Dr. CHARLES G. STOCKTON, of Erie County, reported this case. When first seen by him on May 25, 1895, the patient, a married woman of thirty-six years, had given a history of vomiting and gastric disturbance for two or three years. She had become greatly emaciated. Examination had shown a movable and tender tumor in the epigastric region and an extremely dilated stomach. Her weight at that time had been eighty-eight pounds. The vomited matter had been found to be highly acid, chiefly owing to the presence of much free hydrochloric acid. Although temporarily improved by careful dieting and lavage, she had again begun to fail, so Dr. Roswell Park had made an exploratory incision. Finding a carcinoma of the pylorus and many secondary deposits, he had simply performed gastro-enterostomy by the suture method. Her condition had undergone a most wonderful improvement since this operation, and she now weighed a hundred and thirty pounds, and was in much better health than for more than a year previously. A recent examination of the stomach contents had shown an absence of free hydrochloric acid and the presence of lactic acid. Sarcinæ had been regularly absent in this case.

Gastro-succorrhœa Continua Chronica.—Dr. Max Einhorn, of New York County, read a paper on this subject. This name, he said, was applied to a pathological condition in which considerable quantities of gastric juice were present in the stomach at all times, even in the fasting condition. The disease was apparently of neurotic origin, and was much more frequent in men than in women. Quite commonly the appetite and thirst were increased. The diagnosis of this condition could be made only by repeated examinations of the stomach while the patient was fasting, and we must be careful to distinguish it from ulcer and stenosis of the stomach. In stenosis food particles would be found in the stomach contents, whereas in gastro-succorrhœa the fluid was clear. The prognosis was good, but there was a liability to relapses. The author preferred to treat these cases by lavage and the introduction of a weak solution of nitrate of silver, either in the wash-water or by means of his spray apparatus. By the latter method, a one-and-a-half-per-cent. solution of silver nitrate was used.

Dr. Stockton said that these cases were sufficiently common to be met with by all general practitioners. The disease was often brought about by undue strain on the nervous system, the result of worry or overwork, and sometimes it appeared to be dependent upon certain reflexes.

Dr. Allen Jones, of Erie County, said that while studying Dr. Stockton's case he had come to the conclusion that the slight resistance noticed at a distance of fourteen inches from the teeth had been due to the pressure of this very movable pyloric tumor. Although he had carefully tested for lactic acid by the elaborate method of Boaz, he had failed to detect its presence. It seemed to him difficult to draw the line sharply between cases of pure gastro-succorrhœa chronica and cases in which there was a temporary dilatation of the stomach, with food stagnation. A temporary dilatation of the stomach might result from a tumidity of the folds of mucous membrane at the pylorus in consequence of constant irritation from the ingestion of improper food—*e. g.*, stimulating condiments. Both the galvanic and the faradaic currents increased the flow of hydrochloric acid, and therefore their use would appear to be contraindicated, unless it were that the improved innervation of the stomach resulting from such treatment was found to more than counterbalance this undesirable action on the secretion of acid.

Dr. A. E. Gallant, of New York County, referred to some cases of gastro-succorrhœa in which the condition had appeared to have been brought about by eye-strain. Lavage had proved beneficial in his hands, but the internal use of ichthyol he had found equally beneficial and not quite so disagreeable as lavage.

Dr. Einhorn said that he had had three cases of cancer of the stomach in which there had been free hydrochloric acid or supersecretion. Two of the patients had been operated upon, and one had shown marked improvement for six months, and then had succumbed to the original disease. The other had died about a month after the operation. Although Boaz had pointed out that there was an enormous increase of lactic acid in cancer of the stomach, this fact in itself could not be considered pathognomonic of the disease.

The President said that Nature provided for occasional gastronomic excesses in a normal condition of the digestive organs. One of the great difficulties met with in the treatment of indigestion was to convince patients of the physiological necessity of regularity in eating and of not eating more than was wanted. If calls were made upon the stomach for gastric juice, in season and out of season, it was not to be wondered that the organ finally settled down to secreting constantly a fluid which was approximately gastric juice.

Cases of Atresia and of Stenosis Vaginalis in the Non-pregnant and Pregnant States.—Dr. J. J. E. Maher, of New York County, read a paper thus entitled, and reported several cases that had come under his observation, and then made some remarks on an appended table of a hundred cases observed in labor. In three cases the whole canal had been involved in the narrowing; in fifty-seven cases the abnormity had been situated in the middle third, and in eighty-one cases it had been below this part. Considering the ætiology, he said that in forty-three out of eighty-six cases the condition had appeared to be attributable to post-partum cicatrization; in two cases it had occurred after extensive operations on the vagina; in six cases it had followed ulcerations; in five cases it had been traumatic; and in thirty-one cases it had been of congenital origin. Twenty-four of the cases had presented serious complications, such as abnormal presentations.

The Prognosis of Malignant Tumors as Modified by their Management.—This was the subject of a paper by Dr. Joseph D. Bryant, of New York County. He exhibited tables of statistics showing that cancer was on the increase in this country, even after making due allowance for increased care in collecting statistics. In certain portions of the United States it was much more prevalent in the rural than in the urban districts. Those who were exposed most to the hardships of life appeared to be oftenest the victims of malignant disease, and those organs having special physiological significance were the ones most affected by malignancy. Although in early life the tissues were more responsive to traumatism, and during this period they showed the greatest vulnerability and activity, it could not be denied that malignancy was much more frequent after forty-five years of age. This was in itself a refutation of the theory that malignancy was due to infection. The local treatment of malignancy, the speaker said, should be characterized by prompt discovery and acknowledgment of the tumor, prompt advice as to treatment, and prompt removal of the infected tissues. Early diagnosis could be materially aided by examining specimens of the growth obtained with the microscope "harpoon," but the true condition present could be ascertained only by exploration. After the most thorough removal of the growth and adjacent tissues, the restoration of the patient's strength should be aided by the administration of general tonics, among which arsenic seemed to possess special value. The greatest care should be exercised to detect a recurrence at the earliest possible moment and to promptly remove it by operation. The toxine treatment was of service in some cases, but it should be used as an aid, and not as a substitute for an operation.

The Prognosis of Malignant Tumors as Modified by their Early Detection and Prompt Ablation, by Dr. John W. S. Gouley, of New York County, was the title of the next contribution. (See page 786.)

The Metastasis of Tumors.—Dr. E. K. Dunham, of New York County, contributed a paper on this subject. Metastasis, he said, was a characteristic of malignant neoplasms. Cases of metastasis of cartilaginous tumors and of myxomata had been reported, but he was convinced that in these instances the tumors had really been mixed tumors containing sarcomatous elements. The susceptibility of malignant growths to metastasis was due to their structure, consisting as it did of a large proportion of cells and comparatively little intercellular substance. That metastasis was a mere transplantation was shown by the multiplication of new cells and by the fact that when the new site already contained epithelium normally that epithelium suffered atrophy and did not proliferate when the cells of the primary tumor were carried to the new site and multiplied there. The probability of cells entering the blood current depended chiefly on the firmness of the tumor itself, and this in turn upon the amount of intercellular substance. As soon as a tumor formed, it was liable to metastasis, and no more favorable argument for prompt excision could be adduced.

The Early Detection and Prompt Ablation of Tumors.—Dr. Charles Phelps, of New York County, read a paper with this title. Regarding the supposed bad effect of operating upon quiescent tumors, he said that, if the operation was incomplete, the irritation of the operation might excite a local process to an increased activity, but accumulated experience showed that the best results had followed early operations. As no one pretended to be able to state just when a benign tumor underwent malignant transformation, the logical conclusion was that all accessible tumors, in the absence of positive contraindications, should be removed without hesitation and without regard to their structural character, whether malignant or benign. It might be necessary to be cruel in order to be kind, and our duty was no less plain, though the danger was remote.

The Knife versus Caustics for the Eradication of Tumors.—Dr. Parker Syms, of New York County, said that there should be a complete removal, not only of all visible disease, but of all invisible disease—in other words, of a zone of healthy tissue surrounding the growth. In addition to this, the neighboring lymphatic system required excision, and the whole should be extirpated *en masse.* Undue shock should be avoided, and the healing process expedited as far as possible. A well-performed, aseptic surgical dissection best fulfilled these conditions. The removal by caustics substituted pure guesswork for the intelligence of the surgeon. Again, a destructive caustic so applied as to reach the border of a neoplasm made a continuous wound from the neoplasm to the border of the healthy tissue, thus making a direct channel for infection between the two. Another important advantage of the knife was the avoidance of shock and of disfiguring and disabling deformity.

The Necessity of Complete Extirpation of Tumors, and the Importance of Rapid Cicatrization of the Wound after the Removal of Malignant Tumors in the Female.—Dr. Frederick Holme Wiggin, of New York County, read a paper with this title. He quoted from several of the older surgeons to show that they had realized the importance of cutting wide of the growth and removing the adjacent lymphatics, and he emphasized especially the fallacy of removing only such glands as were already enlarged and palpably diseased. According to Bull's and Dennis's recent statistics the radical removal of carcinoma of the breast had resulted in from twenty-five to twenty-six per cent. of the patients passing the three-year limit without a recurrence. Dr. William H. Welch had shown, he said, that microscopical examination of the pectoral muscles in which there was no appearance of carcinoma had not infrequently shown a plugging up of the lymphatics by a group of cancer cells. Experience had shown that the extirpation of the pectoralis major and minor muscles had not resulted in much disability or deformity.

The Value of Subsequent Constitutional Treatment and of Long Surveillance of Every Patient after the Operation.—This was the title of a paper by Dr. Frederic S. Dennis, of New York County. He said that but little was to be expected from the administration of constitutional remedies, and where such remedies had been employed after operation, and recurrence had been greatly postponed, the good results should be attributed rather to the radical character of the operation than to the beneficial effect of any specific drug. In a few instances he had known patients with supposed sarcoma to improve marvelously under the administration of iodide of potassium, but it was not impossible that in these cases the tumor had after all been a gumma. Tumors did occasionally disappear spontaneously, but such instances were extremely rare. As experience had shown that, if recurrence did not take place for three years after an operation, it would only be observed in about two per cent. of the cases, it was fair to make the three-year limit a test of the permanency of the cure. The importance of operating on recurrent growths was shown by reference to a case in which over a hundred cancerous nodules had been removed, and now a considerable time had elapsed since the last recurrence. Every effort should be made to keep these cases under strict surveillance for a long time after extirpation of the growth, in order to be promptly informed of the existence of a recurrence.

Dr. Stephen Smith, of New York County, contributed a brief paper to this discussion. He advocated the complete removal, not only of all primary tumors, but of all recurrences, as metastatic tumors invariably possessed the same structure as the parent growth. As often as a tumor recurred, he said, it should be removed, so long as there was any possibility of cicatrization of the wound, even by skin grafting.

The Indications of Non-operative Local Treatment; the Therapeutic Value of Toxines.—Dr. W. B. Coley, of New York, present by invitation, read a paper on this subject. He presented an analysis of a hundred cases of malignant disease that he had treated with the mixed toxines of erysipelas and the *Bacillus prodigiosus.* In almost every case the diagnosis had been confirmed by adequate microscopical examinations, and most of the cases had been pronounced "inoperable." Of the hundred cases, sixty-six had been sarcomata, twenty-eight carcinomata, four either sarcoma or carcinoma, and two had first been pronounced sarcoma and afterward proved to be tubercular. In a little over half the sarcoma cases improvement had been shown, particularly in the spindle-cell variety. Out of six patients with melanotic sarcoma, only three had shown even improvement; none had been cured. The results in osteo-sarcoma had been scarcely more satisfactory. All that could be said at present regarding the results of the treatment in carcinoma was that they were very encouraging. To show the permanency of the results in the cases of sarcoma, six patients were presented for examination, some of whom had been cured for three years and over.

Observations on the Minor Degrees of Contracted Pelvis.—Dr. Austin Flint, Jr., of New York County, presented this paper. His statistics had been gathered from six thousand carefully recorded cases of labor, under the direction of the Lying-in Society. They had been gathered from poor patients attended in the tenements, and consequently gave a fairer average result than a study of such cases in hospitals, where there was usually an undue proportion of complicated cases. Contraction of the pelvis of minor degree had been noted in six hundred and fifty-four, or 10·9 per cent. If three hundred and forty-seven cases of premature labor and abortion were excluded, the percentage was 11·56. In Germany the frequency of pelvic contraction was said to be fourteen per cent. One hundred and one operations had been done in ninety-one cases—viz., the use of the forceps in forty-three; version in twenty-nine; breech extraction in eighteen; symphysiotomy in five; craniotomy in two; Cæsarean insection in one; decapitation in one; induction of labor in one; and manual conversion of a brow to a vertex presentation in one. Out of the six hundred and fifty-four cases, but one woman had died, in a case of placenta prævia, in which the patient had been almost exsanguinated when first seen. Twins had occurred nine times, making a total of six hundred and sixty-three children. Of these, thirty-one had been stillborn. The total infant mortality was 5·58 per cent. The majority of the patients in the cases of contraction had been delivered spontaneously, with a good result for both mother and child. Where the true conjugate was less than three inches and a half, operative interference was usually imperative. Just under three inches and a half, either the forceps or version might be resorted to, the latter being rather the better.

Dr. George T. Harrison, of New York County, said that he did not see how any obstetrician could prefer the high forceps operation to the much safer method of version.

Dr. William T. Lusk, of New York County, took issue with Dr. Harrison regarding the relative safety of the forceps and version. He thought that a high forceps operation, skillfully performed in a case of moderate contraction, in which the head had become fixed at the pelvic brim, was a perfectly justifiable procedure. If, however, the head was not so fixed, then symphysiotomy or the Cæsarean section should be selected. He hoped the time was not far distant when craniotomy on a living child would be banished from the recognized methods of obstetric procedure.

The Coming Role of the Medical Profession in the Scientific Treatment of Crime and Criminals.—This was the subject of the president's address. (See page 481.)

A New and Original Method of Obtaining Material for Skin-grafting.—Dr. Zera J. Lusk, of Wyoming County, read a paper thus entitled. The case in which this method had first been employed, he said, had been one of scald from falling into a vat of boiling brine. More than two thirds of the surface of the body had been involved, yet the patient had reacted well. As there had been numerous patches of exfoliated epithelium, the result of vesication, it had occurred to Dr. Lusk to try to make use of them for skin-grafting.

This exfoliated skin had been nearly five weeks separated from the cutis. A piece an inch square had been softened and sterilized in warm boric-acid solution, divided into twelve pieces, and applied to a granulating surface on the left thigh. Seven out of these twelve grafts had rapidly developed into vigorous islands of skin. The treatment had been continued according to this plan, and in about six weeks all except a very small granulating area had been completely healed. There was a marked absence of cicatricial contraction, and the scar tissue was firm and well nourished. Dr. Lusk said he believed that, if the skin was kept at a temperature of between 40° and 90° F., the vitality could be maintained almost indefinitely. The best results were obtained from the thin, transparent epithelial tissue. It was immaterial whether one or both edges of the skin remained attached—indeed, it was not necessary, he said, that it should have any attachment. Experience had shown that grafts from the plantar surface of the feet, and the application of large pieces of skin, were followed by negative results. This new process of skin-grafting he had extended somewhat by raising a blister with cantharides and using the exfoliated epidermis for the grafts. This method had proved very successful in a case of old varicose ulcer.

A Study of Hysteria and Hypochondriasis.—Dr. Charles E. Lockwood, of New York County, in a paper thus entitled considered the many elements entering into the ætiology of these conditions. Hysteria he defined as a yielding of the mind to any impulse which entered it. Hypochondriasis was a morbid concentration of the mind upon the various bodily functions and sensations, to which the subject attributed a false pathological significance. The prognosis depended largely upon the ability of the physician to inspire his patient with supreme confidence in him and upon his patience and perseverance. The preventive treatment embraced the exercise of self-control, having a definite aim in life, and the avoidance of excessive strain on the higher nerve centres. Before the curative treatment was undertaken, any underlying diseased condition must receive attention. Unless there were well-marked indications for the use of drugs, they should not be used, as they served to more or less fix the patient's thoughts on themselves. A very useful sedative mixture for these patients consisted of fifteen grains of bromide of ammonium, ten minims of tincture of cannabis indica, and a drachm of mucilage of acacia, flavored with essence of peppermint. As an antiferment, the subgallate of bismuth had given him excellent results. Exercise on the bicycle might be of service, if carried on with great care, but the excitement attendant upon this form of exercise had seemed in some instances to be harmful. The nutrition of the general nervous system should be improved by the use of the hot and and cold douche.

The Technics of Maunsell's Method of Intestinal Anastomosis.—Dr. Frederick Holme Wiggin, of New York County, read this paper. (See page 741.)

A Review of the Treatment and Results in Nine Cases of Fracture of the Neck of the Femur.—Dr. Douglas Ayres, of Montgomery County, reported these cases, all of which, he said, had been caused by a blow on the trochanter major. Seven out of the nine had occurred in women. He urged especially that the least possible amount of manipulation should be made to determine whether the fracture was intracapsular or extracapsular, as this was not information that was essential to the proper treatment of the case, and in endeavoring to obtain it there was great danger of breaking up an impaction. Bryant's ilio-femoral triangle and Nélaton's line were the most important guides to the diagnosis. Four of these patients had been treated without extension, and five with it. Those who had been treated without extension had been women, the youngest having been sixty and the oldest eighty years of age. Where there was doubt, he said, as to the actual existence of fracture, give the patient the benefit of the doubt, and immobilize the limb. The age and general condition were the best guides as to the need of extension. Extension was usually required in the young, but not in old persons unless there was great shortening.

Disease of the Ankle Joint.—Dr. Thomas M. Ludlow Chrystie, of New York County, said that this joint differed greatly in different individuals regarding the amount of lateral firmness. If adequate protection against twisting or wrenching of the diseased ankle was given, a good result might be confidently expected. To give this mechanical support, he used a shoe with a steel plate and bar at the side of the leg. Plaster of Paris, by its constricting influence, interfered too much with the nutrition of the limb, and did not allow of the restricted use of the foot during convalescence. The joint should be protected both by day and by night, the night brace allowing a smaller amount of flexion and extension than the day brace.

A Brief Contribution to the Therapeutics of Diabetes.—Dr. John Blake White, of New York County, read a paper in which, after reviewing some of the causes of diabetes and the results of various modes of treatment, he said that the best results were obtained from proper regulation of the diet and the use of intestinal antiseptics. Among the latter, benzosol, highly extolled by Piatkowski, had given him the best results. It was tasteless, odorless, and safe. It was insoluble in water, but was readily dissolved by chloroform, ether, or hot alcohol. It was transformed, chiefly in the intestine, into guaiacol and benzoic acid. To begin with, he said, one or two grains should be given in capsules, and this dose gradually increased up to fifteen grains daily. It increased the appetite, improved digestion and assimilation, and perceptibly stimulated the nerve centres. In four cases of diabetes it had caused an entire disappearance of the sugar from the urine and a marked improvement in the general health after three months of treatment.

The Criminal; his Social and Legal Status, and the Philosophy of Reformation.—In a paper on this subject, Dr. William A. White, of Broome County, said that all of our defective and delinquent classes were largely constituted of degenerates. It was in the brain that one would expect to find the greatest evidence of degeneracy, but, while this was true, the variations from the normal were most easily found in the skeleton. Three factors were involved in determining responsibility, viz.: Knowledge of the nature and quality of the act; the forces which impelled to action; and the forces which tended to inhibit action. A proper balance among these factors was necessary to constitute an individual responsible. The question of responsibility was purely one for the medical expert. The author said he was emphatically opposed to capital punishment under any circumstances. Crime was a social disease, to be treated on the same general principles as physical disease.

Some Fractures in Children.—Dr. John F. Erdmann, of New York County, dealt chiefly in this paper with epiphyseal separation at the shoulder, the elbow, and the wrist. He said that his clinical and experimental observations had led him to believe, contrary to the generally accepted opinion, that most of the fractures were complete, and not "green-stick," the fragments being held firmly by the periosteum. He then spoke of the various kinds of fractures in detail.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of November 6, 1895.

The President, Dr. Parker Syms, in the Chair.

Traumatic Peri-hepatic Abscess.—Dr. J. B. Gibbs reported a case of this kind. The term "subphrenic abscess," he said, would probably describe the condition more accurately than the name chosen. In the case to be reported, instead of the abscess originating somewhere else in the abdomen, it had resulted directly from injury. Such cases were comparatively simple, and the prognosis was excellent.

The subject of this report, a boy of eight years, had been healthy up to two weeks before his admission into the hospital. At this time he had received some sort of injury. The first symptoms had been rapidly recurring chills and hectic, all the symptoms, in fact, of profound sepsis. This had been the condition of the patient when first seen by the speaker, in September. The only physical sign had been bulging of an abscess in the intercostal space at the branching apart of the false ribs. At the time of the operation the patient had been apparently in the last stages of septicæmia. The operation had consisted in simply cutting through the skin and incising the abscess. The collection of pus had appeared to be in no way connected with any of the organs. Biological examination had shown nothing present but the ordinary pathogenic microbes. The abscess had formed apparently in the loose connective tissue around the portal vessels. Recovery after the operation had been very rapid. The sole object of the speaker in reporting the case was to show how simple in reality it had been, notwithstanding its apparently very grave aspect. This abscess had apparently been nothing more than a simple abscess or phlegmon arising from a contusion.

Laryngeal Obstruction; Removal of a Portion of the Vocal Cord.—Dr. George B. Hope presented a man whom he had first seen about three years before with laryngeal stenosis from double paralysis of the abductors. This stenosis had come on slowly without hemiplegia or other functional disturbance. About three months after he had first been seen, his condition had been sufficiently grave to warrant tracheotomy as an emergency operation. The case was presented to the society now because of the novel feature in the treatment. As the patient was a plasterer, it had been thought that the continuous wearing of a tracheotomy tube would subject him to more or less irritation and risk from the inhalation of lime dust. The operation suggested had been the removal of a portion of the cords so as to establish a continuous tubular opening, unobstructed by the presence of the vocal cords. This operation had been done, and for a while the case had progressed fairly well; but afterward the patient's respirations had become gradually more difficult, and it had been necessary to reinsert the tube. So far as the speaker knew, this operation had never been performed before, although he had suggested it, and it had received some indorsement. The result, however, in this case had been rather unsatisfactory. Whether or not the unsatisfactory result had been due to a subsequent contraction and ankylosis he could not say. The case was presented to show that this operation which he had suggested had not proved so satisfactory as had been expected from purely theoretical considerations. The man had since worn the tracheotomy tube for nearly three years, and would probably have to wear it for the rest of his life. The removal of the entire vocal cord with the muscular tissue on one side would make an opening large enough to admit of normal breathing without the tube; but the speaker's proposition had been the removal of only a portion of the vocal cord, with the idea of furnishing a sufficiently large opening, and at the same time saving a certain vocal function.

Severe Cases of Clubfoot.—Dr. Reginald H. Sayre presented some models and casts illustrating bad cases of clubfoot. The first one was the model of a moderately severe case in which he had performed Phelps's operation with forcible twisting. Without the removal of any bone the foot had been restored to a nearly normal position.

The next casts were from a man, twenty-six years of age, who had presented the worst example of clubfoot the speaker had ever seen. Subcutaneous sections had been first performed on the right foot, and, these not having proved sufficient, open incisions had been made. The astragalus had then been removed, and had been found to be very abnormal in shape. Owing to some sloughing that had occurred on the sole of the foot, the result had not been so good as it otherwise would have been. In treating the other foot, manual correction under anæsthesia had been resorted to, and subcutaneous section of tendons, fasciæ, and ligaments, and the improvement in position had been maintained with plaster of Paris. After repeated attempts, the foot had been decidedly improved, but the equinus had not been completely overcome. He had then removed a V-shaped piece from the tibia and fibula immediately above the ankle joint, the base of the wedge in front, and this had permitted of the restoration of the foot to a good position. The interesting point in this case was that, although in all probability the astragalus in this second foot was just as abnormal in shape as in the other, he had been able, by the treatment outlined, to secure a better result without removing the astragalus, and with no operative measures on the foot proper except subcutaneous sections of the opposing soft tissues.

Congenital Equino-varus.—The President presented a young woman, twenty years of age, who had been admitted to the Lebanon Hospital last May. She had had an extreme degree of congenital equino-varus of the left foot, and had been practically a cripple. On May 22d, a section of the astragalus and scaphoid had been removed, and the tendo Achillis, plantar fascia, and tight bands on the inner side of the foot had also been divided.

(*To be concluded.*)

Book Notices.

Encyclopédie scientifique des aide-mémoire. Publiée sous la direction de M. Léauté, membre de l'Institut. *Les poisons de l'organisme.* Poisons du tube digestif. Par A. Charrin, professeur agrégé, médecin des hôpitaux, etc. Paris: G. Masson. (Tous droits réservés.) Pp. 5 to 188.

This physiological contribution considers the organic toxines produced by the metabolism of the body. It gives in detail the poisons generated in and by the physiological fluids and by the bacteria which gain entrance to the organism by way of the mouth. The author remarks in his preface that it is his belief that most of the infectious diseases, many of the nervous diseases, and the greater number of the diseases of disturbed nutrition find their ætiology in bacterial ptomaines or in the absorption of the toxic products of the digestive fluids. In part, he is undoubtedly correct in his assumption; but it is doubtful if the medical world is ready at this time to accept so general and broad a statement.

Charrin goes minutely into the toxicity of the saliva and the ordinary foods, stating that poisonous elements increase from the mouth to the intestine. It is comforting to learn that the œsophagus contains few elements, either from its own secretion or from its ingesta, which are productive for evil in the human economy. The author guesses at reasons for this reassuring circumstance, as if loath to admit it, such as the fact that the food remains for a short time in the œsophagus, that the temperature of the organ may not be right for the development of toxalbumins, the position of the œsophagus, and what not.

The stomach, the intestines, and their annexa receive full consideration, the gastric secretions and their malign properties being particularly well and thoroughly described. The bacteria found in the gastric and intestinal contents are enumerated and discussed with reference to their pathogenic influences.

The most interesting chapter is that on the protection and fortification of the body against its alimentary foes. The author gives as circumstances which prevent occasional destruction the facts that the body grows accustomed to the presence of a certain quantity of toxic substance; the antiseptic action of bile, particularly the taurocholates; the prevention of absorption by the specific and selective action of the intestinal epithelium; and the oxidation of poisonous elements. He ascribes to fever the virtue of promoting metabolism and thus freeing the body of toxines by excretion; and he refers to the well-known work of Bouchard on the thyreoid gland and suprarenal bodies in which evidence is adduced that they assist in the neutralization of organic poisons. Finally, the emunctories of the body are given credit for the destruction and disappearance of some of the poisons generated in the system.

The work has been carefully written in a scientific spirit, and it is pleasant to note the credit given to German workers in similar lines. The book is clearly printed on good paper.

Encyclopédie scientifique des aide-mémoire. Publiée sous la direction de M. Léauté, membre de l'Institut. *Spectroscopie biologique, spectroscopie du sang.* Par le Dr. Albert Hénocque, directeur-adjoint du laboratoire de physique biologique du Collège de France. Paris: G. Masson. (Tous droits réservés.) Pp. 5 to 199.

This monograph on the spectroscopic analysis of the blood is introduced by a lucid chapter on the uses and advantages of the spectroscope in biological examinations and investigations. In the next chapter the author describes the hæmatoscope and the hæmatospectroscope, instruments devised by him, the former for immediate examination of oxyhæmoglobin, the latter for more careful examination of the spectra of the blood. The spectroscopic pictures do not vary from those of other physiological observers.

The succeeding chapter is devoted to physiological researches with the hæmatospectroscope. The author has made numerous investigations, and reaches the conclusion that sex, age, city life, and calling exercise, in health, a decided influence upon the amount of oxidized hæmoglobin in the blood. The physiological limits, he maintains, vary between eleven and fourteen per cent., depending upon the conditions named and the state of rest or fatigue. Naturally enough, Hénocque finds that the anæmias and cachexiæ produce a decided diminution in the oxyhæmoglobin, though starvation seems inefficient in this respect; and the reduction due to menstruation is rapidly repaired. Among the pathological conditions in which he finds the oxyhæmoglobin reduced are typhoid fever, hæmorrhages, tuberculosis, carcinoma, diabetes, epilepsy, hysteria, and myxœdema. It is doubtful if the clinician would be willing to wait for the establishment of a table giving percentages, as the author suggests, before beginning his treatment of an anæmic patient.

The author follows this interesting chapter with one on the treatment of anæmia and cachexia in which he praises more particularly the hygienic measures. The derivatives of hæmoglobin are next considered, then there is a spectroscopic study of the blood in the living tissues. The book is concluded by a chapter on the changes in the hæmoglobin induced by exercise, drugs, food, and disease.

This little work is one of a series for students of medicine. It is well printed on heavy paper. The illustrations are far behind those of most American publishing houses. The book has a scientific atmosphere about it, and bears the mark of conscientious work in the laboratory and at the bedside.

The Physical, Intellectual, and Moral Advantages of Chastity. By Dr. M. L. Holbrook. New York: M. L. Holbrook & Co., 1895. Pp. 4 to 120. [Price, $1.]

All that one wishes to learn about the superiority of a life of virtue over one of sexual vice can be gathered from this little, well-printed, verbose book. It abounds in quotations from philosophers, doctors, and founders of creeds, all tending to prove its main proposition. The author has some unique physiological notions, but they do not seriously impair the purpose of his work.

Notes on Surgery for Nurses. By Joseph Bell, M. D., F. R. C. S. Edin., Consulting Surgeon to the Royal Infirmary, etc. Fourth Edition, thoroughly revised. With an Additional Chapter of Advice to Nurses. Edinburgh: Oliver & Boyd. London: Simpkin, Marshall, Hamilton, Kent, & Co., Limited, 1895. Pp. 9 to 180. [Price, 2*s.* 6*d.*]

The presence of a fourth edition of this little book is an indication of its valuable character. The author has a clear, succinct style, and impresses necessary data upon the reader without preliminary verbiage. The various kinds of surgical nursing are well described and insisted upon. He makes "cleanliness" the motto of the surgical nurse. Why the author should have devoted four pages to hospital gangrene, however, is something of a mystery. This is a good book for nurses to read and digest, if for no other reason than to memorize the chapter on General Advice to Nurses. The publishers have done their part of the work well.

Plea for a Simpler Life. By George S. Keith, M. D., F. R. C. P. E. London: Adam and Charles Black, 1895. Pp. viii–1 to 149.

The title of this book is misleading; the work is not so much a plea for a simpler life as it is an harangue against the medicinal treatment of disease. No doubt the author is right in condemning indiscriminate drug-giving and dosing, and no doubt he is eminently correct in inveighing against habitual overeating and overstimulation, but he is absurdly wrong in rating medical practitioners of to-day as druggists and dosers. Intelligent and thoughtful practitioners are certainly aware of Nature's healing power, and in the treatment their object is to aid and not to hinder it, but Dr. Keith seems rather disposed to leave it to Nature alone, and in accusing the medical profession of flying from its former extreme of treatment by depletion to what he considers the present one of over-supporting and stimulation he apparently thinks that he has found the happy mean—but we do not. Apoplexy he takes as an example of the harmful influence of meddlesome treatment. He could not take a better one if the profession indorsed much treatment in this condition, but as a matter of fact it does not, and the wisdom of relative non-interference in apoplexy is generally recognized.

We can best present the author's views by his own words. "To sum up: the doubtful remedies which, according to the new axiom, are as a rule to be avoided in states of disease are medicines of all kinds, alcoholic stimulants, and food; and Nature's methods which we advise to be substituted for them, or rather to be allowed full play without them, are rest, not forgetting rest to the stomach; warmth, or in rare cases, cold; a free supply, usually of water, and always fresh air; and sufficient time for the organs to recover their ordinary working powers, and especially for the nervous system to make up its wasted energy. In short, we must fall back on the old and much-forgotten *vis medicatrix naturæ.*" Surely such words would be amusing were they not pathetic. If one were disposed to be "smartly" critical, this work would afford him unlimited opportunity, and yet some wisdom, especially as concerns dietetic moderation, lurks in the shadow of its absurdities. Without entering into a more detailed discussion of these absurdities, save to remark in passing that the author's belief that carbonate of "ammonia" in camphor mixture is a superior stimulant when the stomach is disturbed must certainly be held as a discovery, we can only regard this book as valuable in so far as it has afforded relief to Dr. Keith's mind. This possible usefulness seems to have struck the author himself, for in the preface he laments the errors of the medicine of to-day and fears the inability of his efforts to convince: "But," he says, "I have said what I have long wished to say. If any good follows I shall be rewarded; and if not, I shall at least enjoy an easier mind."

Annual of the Universal Medical Sciences. A Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by Charles E. Sajous, M. D., and Seventy Associate Editors, assisted by over Two Hundred Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromolithographs, Engravings, and Maps. Volume I to V. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1895. [Issue of 1895.]

So well is the *Annual of the Universal Medical Sciences* known and so generally consulted that criticism would be almost superfluous; commendation, however, is not out of place. The five volumes which compose this publication each year are wonders of arrangement and comprehensiveness. In fact, they are too comprehensive; though it may be wiser for some reasons to include everything and leave to the reader the task of separating the wheat from the chaff, we can not but think that this separation might more properly have been performed by the editorial staff, to the end that their labors had been more judicial and less mechanical. The arrangement of the work, the references, and the indices are ingenious in the highest degree, but these, too, are well known, since they have been the unique and striking features of each *Annual* since the first. Certain changes have been made in the editorial staff during the past year, but these are such that no diminution in the value of the publication can thereby be possible. The edition of 1895 is in every respect the equal of its predecessors, and the continued popularity of the work should be, we think, assured.

BOOKS, ETC., RECEIVED.

Atlas of the Diseases of the Skin, in a Series of Illustrations from Original Drawings, with Descriptive Letterpress. By H. Radcliffe Crocker, M. D., F. R. C. B., Physician to the Department for Diseases of the Skin, University College Hospital, etc., London. Fasciculus XIII. Edinburgh and London: Young J. Pentland. New York: Macmillan & Co., 1895. [Price, $6 each part.]

Essentials of Vegetable Pharmacognosy. A Treatise on Structural Botany. Designed especially for Pharmaceutical and Medical Students, Pharmacists, and Physicians. Part I. The Gross Structure of Plants. By Henry H. Rusby, M. D., Professor of Botany, Physiology, and Materia Medica in the College of Pharmacy of the City of New York. Part II. The Minute Structure of Plants. By Smith Ely Jelliffe, M. D., Professor of Pharmacognosy in the College of Pharmacy of the City of New York. With Five Hundred and Sixty Illustrations. New York: D. O. Haynes & Co., 1895. Pp. 149.

Manual of Childbed Nursing. By Charles Jewett, A. M., M. D., Professor of Obstetrics and Diseases of Children at the Long Island College Hospital. Fourth Edition, revised and enlarged. New York: Bailey & Fairchild Co., 1895. Pp. 60. [Price, 50 cents.]

La Matière vivante. Par F. Le Dantec, maître de conférences à la Faculté des sciences de Lyon. Avec une préface de M. Alfred Giard, professeur à la Sorbonne. Paris: G.

Masson, 1895. Pp. 5 to 191. [*Encyclopédie scientifique des aide-mémoire.*]

Der Syphilisbacillus. Von Dr. van Niessen, Wiesbaden. Mit vier lithographirten Tafeln und einer Heliogravure. Wiesbaden: J. F. Bergmann, 1896. Pp. 94.

Climate and Health. Edited under the Direction of Professor Willis L. Moore, Chief of Weather Bureau, by W. F. R. Phillips, M. D. No. 3. A Summary of Statistics for the Four Weeks ending September 28, 1895. [United States Department of Agriculture.]

Handbook for Hospitals. By Abby Howland Woolsey, Member of Committee on Hospitals, etc. Third Edition. New York: G. P. Putnam's Son. London: The Knickerbocker Press, 1895. Pp. iv–267.

Transactions of the American Gynæcological Society. For the Year 1895. Volume XX.

Forty-third Annual Report of the Children's Aid Society. November, 1895.

Two Cases of Cyst of the Finger. By F. M. Briggs, M. D., Boston. [Reprinted from the *Boston Medical and Surgical Journal.*]

Some Considerations in the Operative Treatment of Fracture of the Patella, with Special Reference to Suture Material and the Use of Salt Solution. By Edwin M. Cox, M. D. [Reprinted from the *Annals of Surgery.*]

Seminium cellulaire dans le carcinome et l'épithéliome, et diagnostic de la généralisation par l'examen du sang. Par le Professeur G. Nepveu, de Marseille. [Extrait de la *Revue des maladies cancéreuses.*]

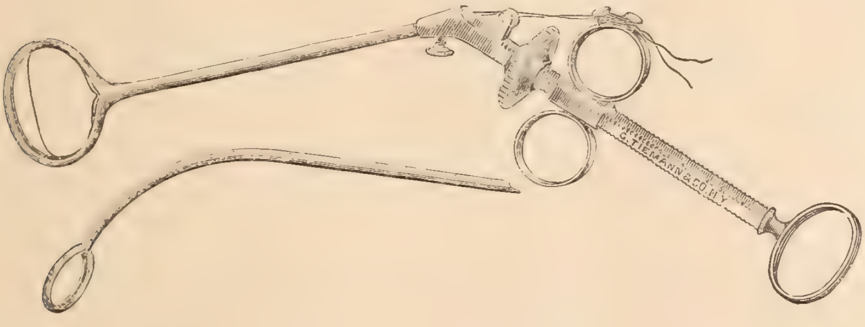
New Inventions, etc.

A MODIFIED COLD-SNARE AMYGDALOTOME.

By Andrew T. Veeder, M. D.,
PITTSBURGH, PA.

This is a simple, strong, and accurately working instrument. (See illustration.)

The oval-ringed cannula has a central groove which lodges the wire. To thread the instrument, form the wire around a piece of wood made of just the size of the groove within the ring, when by a little further effort of formation with the finger the wire will be entirely concealed. With this instrument are three cannulas—small, medium, and large—and it possesses the advantage of perfect adaptation as to angle. Pressure with the ring around the tonsil inside, and digital manipulation without, will enable the operator to secure a desired grasp upon the tonsil to be ablated.



The screw or circular nut is of large diameter and has a coarsely milled edge. The circumference, being unbroken, is always under convenient control of thumb and finger, with sufficient power to cut through the densest tissue. The wire is secured from the accident of slipping by the two closely set steel pegs, allowing the use of the best of all, the figure-of-eight loop. If the operator fears hæmorrhage, this is a comfortable and reliable instrument.

Messrs. Tiemann & Co. are also making other attachments—viz., a small stirrup-formed curved-ring cannula with wire concealed in the same manner, for the removal of growths from the base of the tongue, and curved cannulas with tubes of malleable metal, with or without a small fishhook point for the removal and securing of such growths as might occur upon the vocal cords or within the larynx. Of course, the idea will suggest itself to the reader, this instrument can be made of any desired size and wires of different strength may be used. The ringed cannula is entirely original so far as I am concerned, for I had never seen anything of the kind or anything to suggest it until I made the sketch, and Messrs. Tiemann & Co. made the instrument. This article was ready for publication August 20, 1895, and in the hands of the publisher, but was deferred for the reason that I found I had been superseded by a physician whose name I do not remember, who had a like cannula made for the removal of diseased tonsils and attached to a different handle, which was shown to me at the store of Mr. Meyrowitz in New York, after I had designed and had this instrument made.

Miscellany.

The Topographical Anatomy of the Groin and of the Crural Canal.—In the *Lyon médical* for November 10th there is an article on this subject by M. F. Schmerber. Anatomists and surgeons, he says, have held long discussions without arriving at any agreement in regard to the region situated at the junction of the abdomen with the thigh, for its structure is complex; it is also of great importance from a practical point of view. The aponeuroses of this region serve as a barrier to pus from abscesses which, arising in the iliac fossa or in the neighborhood of the vertebral column, tend to spread toward the thigh. The numerous lymphatic ganglia in this region are frequently the seat of acute or chronic inflammation. In this situation there are two important courses which the intestine may follow in cases of hernia—one leading into the scrotum, and the other toward the thigh; they are the inguinal and the crural canals. What, he asks, is understood by the term region of the groin? Several authors have described under this name a region situated above the crural arch, to the exclusion of that which is situated below this arch and known under the name of Scarpa's triangle. Nicaise and Paulet described an inguino-crural region formed by two parts, one situated above the crural arch, and corresponding to the region of the groin, and the other situated below this arch, and corresponding to Scarpa's triangle. The author agrees with Nicaise and Paulet, and admits the existence of an inguino-crural region composed of an abdominal part and of a crural part. We can not really, he says, separate the study of Scarpa's triangle from that of the internal iliac fossa or from that of the anterior abdominal wall; the aponeuroses, the muscles, and the vessels of Scarpa's triangle are directly continuous with those of the abdomen and with those of the internal iliac fossa; to separate these two regions one from the other would be to make an absolutely artificial division.

Two borders, anterior and posterior, and two surfaces may be distinguished at the crural arch. The upper surface is grooved to receive, in men, the spermatic cord, and, in women, the round ligament; the lower surface is opposite the os innominatum. In the external third of the crural arch the fascia iliaca adheres to the inner surface of the arch. At a distance of about five centimetres from the anterior superior iliac spine it leaves the crural arch to become inserted into the ilio-pectineal eminence, thus dividing the space between the crural arch and the anterior border of the os innominatum into two compartments—an external one for the passage of the psoas muscle and the crural nerve, and an internal one for the passage of the femoral vessels.

The vascular compartment, triangular in form, is found to be limited below by the pectineus muscle, which is inserted into the pectineal crest, or, more accurately, by its aponeurosis; externally by the ilio-pectineal fascia of Thompson; and above by Poupart's ligament. The upper external angle is formed by the conjunction of the crural arch with the ilio-pectineal fascia; the lower external angle is formed by the conjunction of this fascia with the pectineal aponeurosis; and the third or internal angle is partly filled in by Gimbernat's ligament, a fibrous formation which depends from the crural arch and is inserted into the aponeurosis of the pectineus muscle, where it forms, by its conjunction with this aponeurosis, a thickening known under the name of the pubic ligament, or Cooper's ligament. Gimbernat's ligament is triangular, and its external border is opposite the lacuna vasorum and is semilunar in form.

The author designates under the name of crural ring the entire compartment for the vessels. This ring, he says, is longer in women than in men, but the inguinal ring is longer in men than in women, which fact explains the frequency of inguinal hernia in the former. The crural ring gives passage to the femoral vessels and to the lymphatics of the lower limb. The femoral artery is found to the outer side; it is in relation externally with the ilio-pectineal fascia, and internally with the femoral vein. The vein is situated between the artery and the lymphatic ganglia, which occupy the inner part of the crural ring, and correspond internally to the concave border of Gimbernat's ligament. Among these lymphatic ganglia, M. Cloquet described one which, by its situation, belongs both to the abdominal cavity and to the lower limb.

Thompson and Richet described a partition situated between the artery and the vein, and another situated between the vein and the lymphatics. These partitions were said to divide the crural ring into three compartments, which, proceeding from without inward, were the arterial, the venous, and the lymphatic compartment. The author states that he has never found a partition between the different orders of vessels; they are simply separated one from the other by a more or less abundant mass of fatty connective tissue. The inner part of the crural ring is closed by a slender layer, which is the sæptum crurale. On carefully dissecting the posterior part of the inguino-crural region, this state of things may be recognized: Constituting the first layer will be found the peritonæum; then, below, the fascia propria, which forms a diaphragm of feeble resistance to the part of the crural ring which is not occupied by the femoral vessels. The sæptum crurale offers only a slight resistance to the intestine, which tends to escape toward the thigh. The external two thirds of the crural ring are occupied by the vessels and by adhesions that the fascia propria forms around them, and hernia is produced at the feeblest point, at the inner side of the femoral vein.

On leaving the crural ring the femoral vessels course along a groove formed by the muscles of the thigh—externally, the sartorius muscle; internally, the middle adductor; and behind, the pectineus muscle. But these muscles are covered by aponeuroses, and we must then consider it as the aponeurotic crural groove, says the author. It is closed in front by other aponeurotic formations, so that there exists an aponeurotic space entirely closed where the femoral vessels pass; this is the crural canal, which has the form of a funnel flattened antero-posteriorly, or rather that of a triangular pyramid. It may be described as having a base, an apex, three surfaces, and three borders. The base corresponds to the crural ring; the apex, to the point where the internal saphenous vein empties into the femoral vein. This point is found at rather variable distances from the crural arch, but the average is five centimetres. The three surfaces correspond to the three borders of the crural ring—anterior, posterior, and external.

Nearly all writers agree, says M. Schmerber, that the anterior surface of this space is formed by the fascia lata, which is inserted above into the crural arch. The external wall is formed by the aponeuroses which cover the muscles that form the outer wall of the crural groove—that is, on one side the aponeurosis of the psoas muscle, and on the other side that of the sartorius. The sheath of the sartorius muscle is formed by the reduplication of the fascia lata near the external border of this muscle; the two layers of this aponeurosis are united near its internal border, where they again separate into two layers, the superficial layer passing in front of the vessels, and the deep layer being firmly united to the fascia iliaca, thus contributing, with this aponeurosis, to the formation of the external wall of the canal. The posterior wall is formed by the aponeuroses of the middle adductor and pectineus muscles, which become united externally to the deep layer of the fascia lata and to the sheath of the psoas muscle. The anterior wall of the crural canal is formed by the superficial layer of the fascia lata which passes in front of the femoral vessels. This layer is inserted above into the crural arch; below, it gradually merges, near the anastomosis of the internal saphenous vein with the femoral vein, into the walls of this vein. The anterior wall of the crural may be described as having two parts—an outer part, thick and resistant, which covers the artery and the femoral vein; and an inner part which is riddled with numerous openings, through which the blood-vessels and the lymphatics pass, the largest of which openings is formed by the passage of the internal saphenous vein. This inner part of the anterior wall of the crural canal is the fascia cribrosa or cribriformis, and it corresponds to the part of the crural canal which contains the lymphatics, and partly to the femoral vein.

Velpeau, Rüdinger, and others, says the author, considered the fascia cribriformis as a part of the fascia superficialis, while the majority of writers describe it as being dependent from the fascia lata. This opinion, he says, seems more admissible; the fascia cribriformis is, in fact, continuous at all points with the fascia lata. Externally, it is directly continuous with it; internally, it is inserted into the pectineal aponeurosis, which, at this level, is closely connected with the fascia lata. At the point of its insertion the fascia cribriformis forms a prominent semilunar fold; this fold becomes detached from the aponeurosis of the pectineus muscle, passes below the mouth of the saphenous vein, and becomes attached to the sheath of the sartorius muscle.

Such are the walls of the crural canal, or, at least, the external walls. In reality, between the anterior wall and the vessel an aponeurotic layer is found which separates, in some degree, the crural canal, following a forward direction in two unequal parts. It is a prolongation of the fascia transversalis. In the external part of the crural arch the fascia transversalis is inserted into its posterior border. Above the crural ring it helps to form the groove which receives the spermatic cord. In all cases, says the author, the fascia transversalis, after being attached to the crural arch, and having contributed to the formation of the inguinal canal, descends in front of the femoral vessels toward the thigh, dividing the crural canal into compartments. This results in the formation of a prævascular space and a vascular space in the crural canal. Both have a common wall, which in the former is posterior, and in the latter is anterior. Both are formed like a funnel. The prævascular space contains a considerable mass of loose connective tissue. This prolongation of the fascia transversalis was pointed out by Cooper and others. Swijasheninow speaks of a prolongation of the fascia transversalis. Nicaise admitted that the femoral vessels were surrounded with a special infundibuliform sheath formed by the tendon of the transversalis muscle, the fascia transversalis, and a special layer which he called the cellulo-fibrous lamella, united into an aponeurotic sheet which, starting from the posterior surface of Gimbernat's ligament, went to form the internal and anterior wall of the infundibular sheath. This funnel has no walls proper.

It is very difficult, says the author, to demonstrate anything by the most careful dissection, except the prolongation of the fascia transversalis below the crural arch; it is particularly distinct in the newborn. By detaching the fascia lata from the crural arch, after having removed a small quantity of fat, we find this prolongation, which is attached so closely to the walls of the crural canal that it is impossible to see if it is folded upon itself in the form of a funnel, or if it only blends with these walls; the latter hypothesis, says the author, is the simplest and the most admissible.

Thus we may consider the crural canal as a space terminating in a *cul-de-sac* near the anastomosis of the saphenous vein with the femoral vein, the opening of which is represented by the crural ring—that is, all the space situated between the crural arch and the aponeurosis of the pectineus muscle, included between the ilio-pectineal fascia and Gimbernat's ligament. The crural canal exists in the normal condition and is not a pathological canal. It is found divided into two parts by a prolongation of the fascia transversalis; the anterior one containing loose cellular tissue, the posterior one containing the femoral vessels and the lymphatics of the thigh. It is this posterior part which alone deserves the name of femoral vascular funnel, and not the crural canal. In crural hernia the intestine can not become strangulated at the level of the fascia cribriformis, since it corresponds to the prolongation of the fascia transversalis in front. It is in relation internally with the posterior inner wall of the crural canal, and externally with the femoral vein.

The Relation of the Prævertebral Fascia to the Subclavian Artery and the Brachial Plexus.—The December number of the *Edinburgh Medical Journal* contains an article on this subject by Professor Edward Fawcett, of University College, Bristol. There are few structures in the body, he says, which give the student more trouble than the cervical fascia. In most cases he crams up a few facts concerning it without in the least attempting to understand their significance. There are, however, some points in connection with the fascia that he can not so cram up if he would, and one of these forms the subject-matter of the author's paper.

This fascia, he says, is generally described as the fascia which covers the anterior surface of the cervical vertebræ and the prævertebral muscles, and it is, moreover, said to be continued down into the thorax, while laterally it, for the most part, blends with the fascia which stretches between the trapezius and the sterno-cleido-mastoid muscles, passing outward below, however, over the scalene muscles, the brachial plexuses, and the subclavian arteries, to be prolonged into the axilla as the axillary sheath. It is also said to form the *posterior* wall of the carotid sheath. This description is correct so far as it goes, but it errs in leaving the student under the impression that the prævertebral fascia is part only of the cervical fascia, that it is confined to the cervical region—at least, says the author, that is his experience of the students' knowledge of the prævertebral fascia, and as this communication is addressed chiefly to the student, it may not be out of place to endeavor to dispel that idea, and to state dogmatically that the prævertebral fascia, as we meet with it in the neck, is only the cervical part of a fascia which is found lining the internal aspect of the body wall generally; thus we know it in the thorax as the endo-thoracic fascia, in the abdomen under several names—dependent on the parts which it covers—such as the psoas fascia, the quadratus fascia, and the transversalis fascia; in the pelvis we find it spread over the muscles which clothe and help to form its walls, and named after them, pyriformis fascia, obturator fascia, and compressor fascia (the posterior layer of the triangular ligament). It is the failure on the part of the student to grasp the fact that the whole body cavity is lined by a sheet of fascia which, though broken up artificially into parts by relational names, is really a continuous, practically unbroken, sheet, which creates his chief difficulty.

In the neck the fascia can not take the tubular form, because ribs are no longer present to inclose a cavity, for they are stunted in such a manner as to appear as small appendages to the cervical vertebræ—the costal processes or so-called anterior tubercles of the transverse processes of the cervical vertebræ. The fascia here, therefore, is compelled to take the form of a flattened sheet stretched across the vertebral column and the muscles covering it, and it only assumes the tubular form when it reaches the axilla and forms the sheath of the axillary vessels. If we compare the pelvis with the neck, says Professor Fawcett, and imagine it, for the time being, open in front, the fascia in it would form a flattened sheet covering the sacrum and pyriformis muscles, becoming tubular where it is prolonged out with the femoral artery. The pelvic fascia would have then resembled the prævertebral cervical fascia.

If, now, we imagine the costal processes of the cervical vertebræ to be prolonged forward as ribs to meet a cervical sternum, we get a tube formed—a cervical thorax, in fact, if such a term may be permitted—and we should have cervical intercostal muscles developed between the ribs thereof, and a fascia lining the internal aspect of these muscles and ribs. Consider now the pelvis in its normal condition, and we have a large sac of fascia lining a body cavity which stretches from the head to the pelvis. What is the position of this fascia when considered developmentally? Obviously it belongs to the somatopleure layer of the primitive mesoblast, and as such it is placed *within* the epiblastic covering of the body; but the epiblast gives origin to the central nervous system, and from the spinal part of that system the spinal nerves grow out. If, then, the epiblastic is placed external to this developing fascia, the spinal nerves, which are derived from the epiblast, are also placed external to the fascia—all of them. This is a point which can not be too strongly insisted upon, for it explains the position of the brachial nerves, which, as we have seen, are placed outside (behind) the cervical prævertebral fascia, and it explains the position of the cervical nerves, which are placed outside (behind) the cervical prævertebral fascia; it also explains the position of the sacral plexus with relation to the parietal pelvic fascia. All text-books, says the author, insist so dogmatically on the fact that the sacral plexus lies behind the parietal pelvic fascia that most students get the idea that it is a peculiarity of the sacral plexus. He has shown, he thinks, that the cervical plexus does not deserve that distinction. It must be evident that if the spinal nerves lie outside of the fascia alluded to, they or their branches must pierce the fascia in order to supply any viscera inclosed by it. This can be made out very easily in the pelvis; the nerves to the bladder and to the rectum, for instance, can be traced quite easily through the fascia on their way to these viscera.

The vascular trunk system belongs to the splanchnopleure (visceral) system, and as that lies within the cavity inclosed by the somatopleure (parietes), it follows, says the author, that the main vessels must also lie within the cavity of the somatopleure, and hence within the fascia lining and derived from that element. Obviously, then, all branches of this trunk system which are destined for the parietes external to this fascia must pierce it to reach their destination. There is no difficulty in making this out in the pelvis, where the sciatic and pudic arteries can be distinctly seen piercing the parietal pelvic fascia. The intercostal and lumbar arteries just as certainly pierce the thoracic and abdominal fasciæ respectively, in order to reach their destination. With regard to the influence of the intercostal arteries on the subclavian artery, says the author, morphology tells us that the subclavian artery is, for a considerable part of its extent, an intercostal artery. Macalister says that morphologically each stage of the subclavian artery has a different nature. The first stage of the right and of the left are, like the second stages on both sides, the intercostal arteries of the space between the seventh cervical and the first dorsal segment. The third stage is the modified lateral (cutaneous) branch of this intercostal trunk. These statements, says Professor Fawcett, require a little explanation. It must be understood that the scalene muscles are modified intercostal muscles, which, on account of the suppression of cervical ribs, have become altered in form and function; nevertheless, they are cervical intercostal muscles, being attached to the costal processes of the cervical vertebræ and ending below at the first thoracic rib. The subclavian artery, as it lies between these two scalene muscles, is therefore an intercostal artery, and the interval between the two scalene muscles the costal process of the seventh cervical vertebra and the first rib is an intercostal space. The existence of the subclavian artery as an intercostal artery terminates with its emergence from the interval between these muscles. All intercostal arteries give off in their course between the vertebral column and the sternum a lateral branch. If the intercostal space between the scalene muscles, seventh cervical vertebra, and first rib had reached forward to the middle line, the existence of the subclavian artery as an intercostal would have been of a corresponding length, and the lateral branch would have come off as usual; but, as we have seen, this intercostal space terminates at the outer border of the scalene muscles, and there is consequently no reason for the forward continuation of the subclavian as an intercostal. The outgrowth of the upper limb from this region, however, necessitates the accompaniment of an artery of supply, and that artery is found in the original lateral branch of the subclavian as an intercostal. It is the enormous size to which it necessarily attains that hides the true nature of this artery—viz., that it (the third part of the subclavian) is the enormously enlarged lateral branch of the subclavian as an intercostal.

If, after having seen, says Professor Fawcett, that the greater part of the subclavian artery has intercostal characteristics, we compare it with the ordinary intercostals, nothing unusual will be seen in the fact that it first lies within (in front of) the prævertebral fascia, and afterward pierces it on its way to the upper limb. It simply follows the rule—namely, that all vessels coming from trunk arteries must pierce the fascia which lines the interior of the parietes in order to reach the parts without that fascia, and we have seen, and can always see, by careful dissection, that the site of perforation is immediately to the inner side of the anterior scalene muscle.

Why is the Abdomen Opened in the Middle Line?—The *Lancet* for November 30th contains an article on this subject by Mr. F. Winson Ramsay. Text-books on abdominal operations, he says, always recommend the linea alba as the proper site for the incision, or, in default, the linea semilunaris. From this fact, he says, and from the unanimity of opinion which appears to be held by operators on the subject, one would naturally suppose that there must be some great advantages to be obtained from opening the abdomen in one or other of these situations. On inquiry he finds they are as follows: 1. Vascularity is low in the middle line, and therefore the hæmorrhage is less. 2. There are fewer and less important structures to cut through. 3. There is greater facility of access to all parts of the abdominal cavity. As regards the first, this advantage is imaginary and is really a disadvantage, for, although the abdominal wall is more vascular in other situations, yet there is never any hæmorrhage in incising the abdominal wall elsewhere but what can be easily and speedily controlled, and moreover, it is this absence of vascularity which tends to delay rapid and permanent healing, and therefore predisposes to hernia. The second is also a disadvantage, for the whole depth of the incision being through tendinous or fibrous layers having a great similarity to one another renders it difficult, especially to young operators, to know exactly the depth of the incision. This is especially the case when there has been inflammatory action. It is difficult to get the layers exactly together again and they always cohere, so that the depth of the scar when formed is barely an eighth of an inch thick. This is noticed especially when making an incision through the scar of a previous incision. The third is the only valid argument that can be used in favor of the median incision, and is theoretical rather than practical.

A disadvantage of the median incision is that, should it be necessary to extend it upward, the umbilicus comes in the way, and, as it can not be rendered aseptic with certainty, it has to be avoided and the incision deflected, while some operators remove the umbilicus entirely. This being so, asks the author, is there any situation in the abdominal wall which offers further advantages without these disadvantages? Mr. Ramsay thinks so, and that the ideal incision for abdominal section is one vertically through the middle of the rectus muscle on either side, and for the following reasons: 1. Although the parts are vascular there is no hæmorrhage; if the epigastric artery is cut, it is easily secured, and this vascularity tends to rapid and efficient healing. 2. There is no injury to the muscle, for after the fascia is divided the muscular fibres are easily separated with a director and retracted. 3. The incision can be made in any part of the muscle and continued up to the ribs or down to the pubes in the same manner. 4. The umbilicus gives rise to no inconvenience. 5. The layers are so well marked that it is impossible with ordinary care to wound the viscera. 6. Access to all parts of the abdominal cavity is just as easy as in the middle line (this, the author states, he has found from experience, while in some cases, where tubal or ovarian disease is known to be only on one side, it is an advantage to have the incision slightly on that side). 7. The scar left looks as if there had been a skin incision only—it does not pucker or dip in like the ordinary scar, and the separate layers are not coherent. 8. Most important of all, if the wound is properly closed the risk of hernia is reduced to the least possible minimum. The best method is to close the wound with silkworm-gut sutures, running through all the layers. These are placed *in situ* and held by forceps; then the peritonæum and posterior layer of fascia are brought together with fine silk sutures, either continuous or interrupted, and then the anterior layer of fascia in the same manner. This brings the muscle firmly together, making the passage through its fibres valvular, restores the natural thickness of the abdominal wall, and prevents coherence of the fascial layers, leaving the abdominal wall in as good a condition as before the operation. Should temporary drainage be essential, the necessary sutures should be placed *in situ* and marked with knots. They can then be drawn and tied accurately when the tube is withdrawn. Even if drainage has to be continued for some time, the track running through a thick wall will close better and more firmly, and be less likely to give way afterward. Mr. Ramsay says that he has adopted this incision during the past two months in five cases—viz., two ovariotomies, one tubal gestation, one pelvic abscess, and one cholecystotomy—and has found that these advantages claimed are real and practical. He is convinced that if some surgeons of higher standing than himself would give this matter their careful consideration this incision would be generally adopted, and that students would be taught that the one place to be avoided in opening the abdomen is the linea alba.

Men's Names in Anatomical Terms.—Under the heading of Eponymic Structures in Human Anatomy, Dr. James Finlayson contributes a valuable article to the December number of the *Glasgow Medical Journal.* It contains a list of names which, with one or two corrections that we have taken the liberty of making, is as follows:

Abernethy, John, English surgeon and anatomist, 1764–1831.—Abernethy's fascia (over external iliac artery).

Alcock, Thomas, English surgeon, 1784–1833.—Canal of (for internal pudic artery).

Andersch, C. S., German anatomist, close of eighteenth century.—Ganglion of (petrous of glosso-pharyngeal).

Arantius (or Aranzi), Julius Cæsar, Italian anatomist, 1530–1589.—Corpora Arantii; Duct of and Canal of (ductus venosus); Ventricle of (end of calamus scriptorius).

Arnold, F., German anatomist, born 1803.—Ganglion of (otic); Nerve of (auricular branch of vagus); Suspensory ligament of (incus); Convolution of (posterior inferior, occipito-temporal lobe); Membrane of (pigmented layer of iris).

Auerbach, Leopold, German anatomist, 1824–.—Ganglion of; Plexus of (in small intestine).

Baillarger, J., French physician, 1815–.—Lines of (in brain).

Barkow, Hans Karl Leopold, Professor of anatomy in Breslau, 1798–1873.—Ligament of (in olecranon fossa).

Bartholin Thomas, Danish physician, 1616 or 1619–1680.—Glands of Bartholin; Duct of Bartholin (sublingual).

Baudelocque, Jean Louis, French accoucheur, 1745–1810.—Line of (external conjugate diameter of pelvis).

Bauhin, Caspar, French anatomist, 1560–1624.—Valve of; Glands of (tongue).

von Bechterew, W., Russian neurologist, living.—Nucleus of (near Deiters's, in medulla).

Bell, Sir Charles, Surgeon and physiologist in London (Scottish birth), 1774–1842.—External respiratory nerve of; Muscle of (trigone of bladder).

Bellini, L., anatomist of Florence, 1643–1704.—Ligament of (hip joint); Ducts of (kidneys).

Bernard, Claude, French physiologist, 1813–1878.—Canal of (supplementary duct of pancreas).

Bertin, E. J., French anatomist, 1712–1781.—Ligament of (ilio-femoral); Bones of (in sphenoid); Septa or Columns of (between pyramids of kidney).

Bichat, M. F. Xavier, Professor of anatomy and physiology in Paris, 1771–1802.—Fissure of (cerebellum); Foramen of (third ventricle).

Bidder, Heinrich F., German anatomist, 1810–(papers published in 1866 and 1868).—Ganglion of (auriculo-ventricular sæptum).

Bigelow, Henry J. [not "John Milton," as Dr. Finlayson has it], American surgeon, 1846–.—Ligament of (ilio-femoral or Y-shaped).

Blandin, Philippe Frédéric, French surgeon, 1798–1849.—Glands of (tongue).

Blumenbach, Johann Friedrich, German anatomist, 1752–1840.—Clivus or plane of (in sphenoid)

Bochdalek (Father), Victor Alexander, Professor of anatomy in Prague up till 1869. Bochdalek (Son), Victor, anatomist in Prague (papers published from 1866).—Ganglion of (above upper canine tooth).

Bock, Au. C., German anatomist (book on ganglionic system published in 1817 to 1821).—Nerve of (pharyngeal); Ganglion of (cavernous).

Boerhaave, Hermann, Dutch physician, 1668–1738.—Glands of (sudoriparous).

Botalli, Leonard, Italian anatomist, born 1530; lived in France from 1561 till 1585.—Foramen of Botalli (foramen ovale); Ligament of (obliterated ductus arteriosus).

Bowman, Sir William, English anatomist and physiologist and ophthalmic surgeon, 1816–1892.—Glands of (in olfactory mucous membrane); Bowman's capsule (in kidney); Bowman's discs (muscles); Bowman's lamellæ (of cornea); Muscle of (fibres in ciliary muscle).

Breschet, Gilbert, French anatomist, 1784–1845.—Canals of (in diploë, for) Breschet's veins; Sinus of (spheno-parietal).

Broca, P., French surgeon and anthropologist, 1824–1880.—Convolution of.

Brodie, Sir Benjamin, English surgeon, 1783–1862.—Bursa of (knee).

Bruch, Max. Julius Friedrich (thesis published in Berlin in 1835).—Glands of (in conjunctiva, synonymous with trachoma glands of Henle); Muscle of (ciliary); Membrane of (chorioid).

Brücke, Ernst, German physiologist, 1819–.—Muscles of (ciliary muscle).

Bryant, Thomas, English surgeon, licensed 1849 (living).—Triangle of (ilio-femoral at hip).

Brunner, Johann Conrad, Swiss anatomist, 1653–1727.—Brunner's glands.

Burdach, K. F., German anatomist, 1776–1847.—Columns of Burdach.

Burow (Father), August, German surgeon, 1809–1874. Burow (Son), Ernst, German surgeon, 1838–1885.—Veins of (connecting portal and general circulation).

Burns, Allan, Glasgow anatomist, 1781–1813.—Ligament of (at saphenous opening); Space of (in neck).

Camper, Pierre, Dutch physiologist, 1722–1789.—Facial angle of; Ligament of (in urethra); Fascia of; Intercolumnar bands.

Carcassonne, Bernard Gauderic, French surgeon, born 1728.—Ligament of (deep perineal fascia).

Casserio, Giulio, Italian anatomist, 1545–1616.—Perforated muscle of Casserius (coraco-brachialis); Artery of (internal carotid and middle meningeal); Nervus perforans Casserii (musculo-cutaneous).

Chassaignac, C. M. E., French surgeon and anatomist, 1805–1879.—Chassaignac's tubercle (anterior tubercle of transverse process of sixth cervical vertebra).

Chaussier, François, French surgeon and anatomist, 1746–1828.—Line of (rhaphe of corpus callosum).

Chopart, François, French surgeon, 1743–1795.—Line of (in foot).

Clarke, Joseph Lockhart, English microscopist, 1817–1880.—Clarke's columns.

Claudius, Friedrich Matthias, Professor of anatomy at Marburg, 1822–1869.—Cells of (cochlea).

Clevenger, Shobal, American neurologist, 1843.—Inferior occipital fissure of (in brain).

Cloquet, Hippolyte, Parisian surgeon, 1787–1840.—Ganglion of (naso-palatine); Angle of (facial); Sæptum of (sæptum crurale internum).

Colles, Abraham, Irish surgeon, 1773–1843.—Ligament of (ligamentum triangulare femoris); Fascia of (deep layer of superficial perineal).

Cooper, Sir Astley Paston, English surgeon, 1768–1841.—Oblique band of (elbow joint); Ligament of (in mamma); Reflected tendon of (transversalis); Fascia propria of (internal abdominal ring).

Corti, Marquis Alfonso, Italian anatomist (paper published in 1851).—Arches of; Cells of; Fibres or rods of; Ganglion of; Membrane of; Organ of; Tunnel of cochlea).

Cotunnius (Cotugno), Domenico, Italian anatomist, 1736–1818.—Aqueduct of (aqueductus vestibuli); Liquor of (perilymph); Nerve of (naso-palatine); Recessus Cotunnii (in petrous bone).

Cowper, William, English anatomist and surgeon, 1666–1709.—Cowper's glands; Ligament of (pubic).

Cruveilhier, Jean, French surgeon and pathologist, 1791–1874.—Plexus of (in cervical region); Fascia of (superficial perineal).

Cuvier, Georges, L. C. D., French naturalist, 1769–1832. —Canal of (ductus venosus).

von Cyon, Elie, Russian physiologist, born at Telsh, 1843–. —Nerve of (depressor).

Dalton, John Call, Jr., American physiologist, 1825–.—Parietal fissure of (in brain).

Deiters, Otto Friedrich Karl, German anatomist and histologist, 1834–1863.—Deiters's nucleus (in direct sensory cerebellar tract); Deiters's cells (inner ear).

Denours, Pierre, French ophthalmologist, 1702–1795.—Membrane of (Descemet's).

Descemet, Jean, French physician, 1732–1810.—Membrane of (cornea).

Douglas, James, obstetrician and anatomist in London (Scottish birth), 1675–1741.—Douglas's pouch; Douglas's semilunar fold or ligament.

Duverney, Joseph Guischard, French physician, 1648–1730.—Duverney's gland (gland of Bartholin); Foramen of (foramen of Winslow).

von Ebner, Victor, German anatomist (paper published in 1873).—Gland of (in tongue).

Ecker, Alexander, German anatomist, professor of comparative anatomy in Freiburg, 1816–1887.—Occipital and transverse fissures of (in brain).

Ehrenritter, .—Ganglion of (jugular of glosso-pharyngeal).

Ellis, George Viner, Professor of anatomy, University College, London; elected a Fellow of Royal College of Surgeons in 1843 (living).—Ligament of (in rectum).

Eustachius, B., Italian anatomist, died 1574.—Eustachian cartilage, canal, or tube; Eustachian valve (in heart).

Falloppius, G., Italian anatomist, 1523–1562.—Falloppian tube, artery, and isthmus; Aqueduct, arch, and canal of; Hiatus of; Muscle of (pyramidalis nasi).

Ferrein, A., French physician, 1693–1769.—Canal of; Pyramids of; Tubes of; Foramen anonymum Ferreini (hiatus Falloppii).

Flechsig, R. Ferdinand, German, born 1817.—Columns of (spinal cord).

Flood, Valentine, Irish surgeon, died 1847.—Ligament of (gleno-humeral).

Folius, Cæcilius, Italian anatomist, 1615–1660.—Muscle of (laxator tympani); Processus Folianus (processus gracilis of malleus).

Foltz, J. C. E., French ophthalmic surgeon, 1822–1876.—Valve of (at canaliculus lacrimalis).

Fontana, Felix, Italian anatomist, 1730–1805.—Spaces of and canal of (at iris).

Foville, A. L., French physiologist, 1799–1878.—Oblique fasciculus of (peduncle of cerebellum); Decussation of (in cerebellum).

Frankenhäuser, F., German (memoir published in 1867).—Ganglion of (cervico-uterine).

Galeati (or Galeazzi), Dom. Max. Gusman, Italian anatomist, 1686–1775.—Glands of (Lieberkühn's).

Galen of Pergamum, physician to Emperor Marcus Aurelius, 130–200 a. d.—Venæ Galeni (in brain); Vein of (anterior cardiac vein); Galen's anastomosis (between superior and inferior laryngeal nerves); Foramen of (foramen ovale).

Gartner, Karl F., German anatomist, 1786–1833.—Duct of or canal of (relic of Wolffian duct).

Gasserius, Johann Laurentius.—Gasserian ganglion (named in his honor by his pupil, Hirsch, in 1765); Muscle of (ligamentum mallei externum or laxator tympani minor).

Gavard, Hyacinthe, French anatomist, 1753–1802.—Muscle of (oblique fibres in stomach).

Gennari, Francisco, Italian anatomist (book published, 1782).—Lines of (Baillarger's).

Gerdy, Pierre Nicolas, French anatomist, 1797–1856.—Ligament of (in axilla).

de Gimbernat, Don Antonio, Spanish surgeon; professor at Barcelona from 1762–1774.—Gimbernat's ligament.

Giraldés, Joachim Albin, anatomist and surgeon in Paris, born in Portugal, 1808–1875.—Organ of (epididymis).

Glaser, Johann Heinrich, Swiss anatomist, 1629–1675.—Glaserian fissure (petrous bone); Glaserian artery (tympanum).

Glisson, F., English physician and professor of medicine in University of Cambridge, 1596–1677.—Capsule of.

Godman, John D., American anatomist, 1794–1830.—Fascia of (root of neck and joining pericardium).

Goll, Friedrich, Swiss anatomist, born at Zürich, 1829.—Column or tract of.

Gowers, William Richard, English neurologist, graduated in medicine, 1869 (living).—Gowers's columns (antero-lateral, ascending).

de Graaf, Regnier, Dutch anatomist, 1641–1673.—Graafian follicles or vesicles.

Gratiolet, Louis Pierre, French anatomist, 1815–1850.—Gratiolet's bundle (occipital lobe and optic radiation).

Gudden, Bernhardus, German neurologist, 1824–. Thesis, 1848.—Commissure of (optic tract).

Guthrie, George James, English military surgeon, 1785–1856.—Muscle of (compressor urethræ).

Haller, Albertus, Swiss anatomist and physiologist, 1708–1777.—Ligamentum colicum Halleri (a fold extending along ascending colon); Linea splendens of (in spinal pia); Circulus venosus of (around nipple).

Hannover, A., German ophthalmologist, 1814–.—Canal of (Petit's).

Harder, Johann Jacob, Swiss anatomist, 1656–1711.—Gland of (obsolete in man).

von Hasner, Joseph Robert, German ophthalmic surgeon, born 1819 (tract published, 1850).—Valve of (nasal duct).

Hassall, Arthur Hill, English physician and chemist.—1817-1894.—Concentric corpuscles of (thymus).

Havers, Clopton, English anatomist, end of seventeenth and beginning of eighteenth century.—Haversian canals and lamellæ; Haversian fringes and glands.

Heister, Lorenz, German anatomist, 1683–1758.—Valve of (gall bladder).

von Helmholtz, Hermann Ludwig Ferdinand, Professor of physics in Berlin, 1821–1894.—Ligament of (malleus).

Helvetius, J. C. A. —Ligament of (lateral bands in stomach).

Henle, Fried. Gustav Jacob, German anatomist and pathologist, 1809–1885.—Looped tubes of; Fenestrated membrane of (beneath endothelium of arteries).

Hensen, Victor, German embryologist, 1835–.—Canal of (ear).

Herophilus (fragments collected by Marx), Alexandrian surgeon and anatomist about B. C. 300.—Torcular Herophili (ληνός).

Hesselbach, F. K., German surgeon, 1759–1816.—Triangle of (lower part of abdomen).

Hey, William, surgeon in Leeds, 1736–1819.—Ligament of (fascia lata).

Highmore, Nathaniel. English physician, 1613–1684.—Antrum of (in jaw); Corpus Highmorianum (in testicle).

Hilton, John, English surgeon, 1804–1878.—Muscle of (arytæno-epiglottideus inferior); Line of (at anus).

Hirschfeld, Ludwig Moritz, German neurologist, 1816–.—Ganglion of (hippocampal gyrus).

His, Wilhelm, German anatomist, .—Space of (for lymphatics).

Holden, Luther, English surgeon, licensed 1838 (living).—Line of (Poupart's ligament).

Home, Sir Everard, English surgeon, 1763–1832.—Lobe of (prostate).

Horner, William Edmonds, American surgeon, 1793–1853.—Muscle of (tensor tarsi).

Houston, John, Irish surgeon, 1802–1845.—Folds of (in rectum); muscle of (compressing veins of penis); valves of (in rectum).

Hovius, Jacobus, Dutch anatomist, M. D. in 1702.—Plexus of (in ciliary region); Canal of (same as Fontana); Sinus venosus Hovii (venæ vorticosæ).

Huguier, Pierre Charles, French surgeon, 1804–1873.—Glands of (two small glands opening into vagina); Canal of (for chorda tympani).

Hunter, John, physiologist, pathologist, and surgeon in London (Scottish birth), 1728–1793.—Hunter's canal.

Hunter, William, anatomist, physician, and obstetrician in London (Scottish birth), 1718–1783.—Ligament of (round ligament of uterus).

Huschke, Emil, German anatomist, 1797–1858.—Huschke's valve (lacrymal); Huschke's canal (tympanum); Huschke's foramen (tympanic plate).

Ingrassias, Giovanni Filippo, anatomist in Naples, 1510–1580.—Processes of (lesser wings of sphenoid).

Jacob, Arthur, Irish ophthalmic surgeon, 1790–1874.—Jacob's membrane or coat (in retina).

Jacobson, Ludwig Levin, Danish anatomist, 1783–1843.—Jacobson's anastomosis; Canal of; Cartilage of; Jacobson's nerve; Jacobson's organ.

Jarjavay, J. F., French surgeon, 1815–1868.—Muscle of (depressor urethræ).

Kerkring, Theodorus, Dutch anatomist, 1640–1693.—Valves of (valvulæ conniventes).

Kilian, Hermann Friedrich, German professor of midwifery, 1800–1863.—Linea prominens of (sacrum).

Kobelt, Georg Ludwig, German surgeon, 1804–1857.—Muscle of (compressor of venæ dorsales penis).

Kölliker, Rudolph Albert, Swiss anatomist and professor in Würzburg, 1817–.—Nucleus of (central canal of spinal cord).

Krause, Wilhelm, German anatomist, 1833–.—Glands of (conjunctiva); Membrane of (microscopic muscular structure).

Labbé, Charles (thesis published in Paris, 1882).—Posterior anastomosing vein of Labbé (a cortical cerebral vein).

Lancisius, J. M., Italian professor of anatomy, 1654–1720.—Nerves of Lancisi (in corpus callosum).

Laumonier, Jean Baptiste, French surgeon, 1749–1818.—Ganglion of (carotid superior).

Laura, Secondo, Italian physician, 1833–.—Nucleus of (external auditory).

Lauth, Thomas, German anatomist, 1758–1826.—Transverse ligament of (atlas).

Leber, Theodore, German ophthalmologist, 1840–.—Venous plexus of (in eyeball).

Lesser, Adolph, physician in Berlin, born 1851.—Triangle of (in neck).

Lieberkühn, Johann Nath., German physician and naturalist, 1711–1756.—Lieberkühn's ampulla; Lieberkühn's crypts or glands.

Lieutaud, Joseph, French anatomist, 1703–1780.—Uvula of (in trigone of bladder).

Lisfranc, Jacques, French surgeon, born 1847.—Lisfranc's tubercle (on first rib).

Littre, Alexis, French surgeon, 1658–1726.—Glands of (in urethra).

Lizars, John, Edinburgh surgeon, 1783–1860.—Lines of (gluteal region).

Lockwood, C. B., English surgeon, M. R. C. S. in 1878 (living).—Ligament of (tendo orbitalis superior).

Loewenberg, Benjamin, German aural surgeon in Paris, 1836–.—Canal of (in cochlea).

Loewit, M., physiologist and pathologist in Prague (papers published, 1880–'81).—Ganglion of (bulbus arteriosus).

Louis, P. C. A., French physician, 1787–1872.—Angulus Ludovici, or Louis's or Ludwig's angle (sternum).

Lower, Richard, English physician, 1631–1691.—Tubercle of (in right auricle).

Ludwig, Karl Friedrich Wilhelm, Professor of physiology in Leipsic, 1816–1895.—Ganglion of (right auricle of heart).

Ludwig's angle (see Louis).

von Luschka, Hubert, German anatomist, 1820–1875.—Gland of (coccygeal); Cartilage of (larynx); Tonsil of; Muscle of (in utero-sacral ligament).

Luys, Jules, French physician, 1826–.—Body of (between crusta and tegmentum).

Macdowel, Benjamin George, Irish surgeon, 1820–1885.—Frenum suspensorium of (shoulder, pectoralis).

Magendie, François, French surgeon and physiologist, 1783–1855.—Foramen of (in fourth ventricle).

Malpighi, M., Italian anatomist, 1628–1694.—Acini, Bodies, Canals, Capsule, Corpuscles, Follicles of; Glomeruli, Pyramids, Tubules, Tufts of; Malpighian layer (in skin).

Marshall, John, English surgeon, 1818–1891.—Oblique vein of (vein crossing dorsal portion of left auricle); Vestigial fold of (pericardium).

Mauchart, Burchard David, Professor of anatomy in Tübingen, 1696–1751.—Ligament of (odontoid).

Mayer, August Franz, German anatomist, 1787–1865.—Ligament of (carpus).

Meckel, Johann Friedrich, German anatomist, 1714–1774.—Meckel's ganglion; Meckel's diverticulum; Meckel's space; Cartilage of (mandible, embryonic).

Meibomius, H., German physician, 1638–1700.—Meibomian follicles and glands; Foramen of (cæcum of tongue).

Meissner, Georg, German physician, 1829–.—Plexus of (in intestinal submucosa).

Mendel, Emanuel, German neurologist, 1839–.—Convolution of (opercular).

Mercier, L. A., French surgeon, 1811–1882.—Mercier's bar (in front of post-trigonal pouch).

Merkel, Karl L., German anatomist, 1812–1876.—Ganglia and corpuscles of (touch); Muscle of (kerato-cricoid).

Mery, Jean, French surgeon, 1645–1722. — Glands of (Cowper's).

Meynert, T., Professor of anatomy in Vienna, 1833–.—Ganglion of (optic basal).

Mierzejewsky, M., French physician (present time).—Foramen of (under ligula).

Mohrenheimer, .—Space of (between pectoralis major and deltoid).

Moll, Jacob Antonius, Dutch histologist (thesis in 1857).—Glands of (at margin of eyelid).

Monro, Alexander (Monro secundus), Professor of anatomy in Edinburgh University, 1733–1817.—Foramen of (said to have been previously described by Vieussens); Sulcus of (in third ventricle of brain).

Morgagni, J. Baptiste, Italian physician and pathologist, 1682–1771.—Caruncula Morgagni (middle lobe of prostate); Frenum Morgagni (projection formed by the ileo-colic and ileo-cæcal valve); Glands of (urethral); Fossa of (navicular); Hydatids of (testicle; fimbriæ of Falloppian tube); Foramen cæcum Morgagni (in tongue); Columns of (in rectum).

Müller, Heinrich, German anatomist, 1820–1864.—Muscles of (in spheno-maxillary fossa, in eyelid, and circular fibres of ciliary muscle).

Müller, Johann, German anatomist and physiologist, 1801–1858.—Ganglion of (jugular and prostatic); Duct of (fœtal); Fibres of (in retina).

Naboth, Martin, Saxon physician, 1675–1721.—Glands of (neck of uterus); Ovules of; Vesicles of (same as glands).

Nasmyth, Alexander, dental surgeon in London (paper published 1839), died 1849.—Nasmyth's membrane (cuticle of enamel).

Nélaton, Auguste, French surgeon, 1807–1873.—Test line of (anterior superior spine of ilium to tuberosity of ischium); Fibres of (circular fibres of rectum).

Neubauer, Johann Ernst, German anatomist, 1742–1777.—Artery of (occasional branch of inferior thyreoid).

Nuck, Antoine, Professor of anatomy and surgery at Leyden, 1650–1692.—Canal of; Glands of.

Nuhn, Anton, Professor of anatomy in Heidelberg, born 1814.—Glands of (near apex of tongue).

Pacini, Filippo, Italian physiologist and physician, 1812–1883.—Corpuscles of (touch).

Pacchionius, Antoninus, Roman physician, 1665–1726.—Pacchionian bodies; Pacchionian fossæ or depressions.

Pansch, Adolf, in 1865 Prosector of anatomy at Kiel University, 1841–1887.—Parietal fissure of (in brain).

Pechlin, Johannes Nicolaas, German , 1644–1706.—Glands of (Peyer's).

du Petit, François Pourfour, French surgeon and anatomist, 1718–1794.—Canal of (in ligament of lens).

Petit, J. L., French surgeon, 1674–1750.—Triangle of (abdomen); Sinus of (Valsalva).

Peyer, Johann K., Swiss anatomist, 1653–1712.—Peyer's glands and patches.

Poupart, François, French anatomist, 1616–1708.—Poupart's ligament (also called ligament of Vesalius).

Rathke, Martin, German anatomist, 1793–1860.—Gland of (nasal).

Rauber, August, German anatomist, 1845–.—Convolution of (nuclear, in olivary body).

Reichert, Karl B., German anatomist, 1811–1883.—Membrane of (Bowman's).

Reil, Johann Christian, German physician, 1759–1813.—Island of; Fissure of; Band of (heart).

Reissner, Ernst, Russian anatomist, 1824–1878.—Reissner's canal (cochlea); Reissner's membrane.

Remak, Robert, German physician, 1815–1865.—Ganglion of (in heart).

Retzius, Andreas A., Swedish anatomist, born 1795.—Ligament of (annular ligament of leg).

Ribes, François, Professor of hygiene at Montpellier, 1800–1864.—Ganglion of (upper end sympathetic).

Richet, C., French physiologist, .—Fascia and canal of (for umbilical vein).

Ridley, H., English anatomist, 1653–1708.—Sinus circulaire de Ridley (brain).

Riolanus, Jean, French anatomist, 1580–1657.—Muscle of (in eyelid); Bones of (in petro-occipital suture).

Rivini, Augustus Quirinus, German professor of physiology, 1632–1723.—Duct of (one of sublingual ducts); Notch of (in tympanic ring); Foramen of (in tympanum, disputed); Gland of (sublingual).

Robin, C. P., French physiologist, 1821–1885.—Space of (in adventitia of arteries).

Rolando, Louis, Professor of anatomy in Turin, 1773–1831.—Fissure of; Columns of (medulla); Tubercles of (medulla oblongata).

Rosenmüller, Johann Christian, in 1820 he was appointed professor of anatomy and surgery in University of Leipsic (drawings in works are by himself), 1771–1820.—Fossa of; Organ or body of; Rosenmüller's gland.

Ruyschius, Fred., Professor of anatomy at Amsterdam, 1638–1731.—Membrana Ruyschiana (chorioid).

Santorini, Giovanni Domenico, Italian anatomist, 1681–1737.—Canal of; Cartilages and ligament and tubercle of; Duct of; Fissure of; Muscle of (risorius); Incisura Santorini (external auditory meatus).

Scarpa, Antoine, Italian surgeon, 1752–1832.—Scarpa's triangle; Scarpa's fascia; Nerve of (naso-palatine); Scarpa's liquor (the endolymph); Ganglion of (near internal auditory meatus); Foramina of (incisor canal); Canals of (superior maxilla); Sinus ellipticus Scarpæ (ampulla).

Schacher, P. G., German physician, 1674–1737.—Ganglion of (ophthalmic).

Schachowa, Seraphina (thesis on kidneys published in Bern, 1876).—Spiral tubules of (kidney).

Schlemm, F., German anatomist, 1795–1858.—Canal of (sclera); Ligament of (shoulder).

Schmiedel, .—Ganglion of (carotid inferior).

Schneider, Conrad Victor, Professor of medicine, Wittemberg, 1614–1680.—Schneiderian membrane.

Schwalbe, Gustavus A., German anatomist, 1844–.—Convolution of (parieto-occipital).

Serres, A. E. R. A., French anatomist, 1786–1868.—Dental glands of (emerging teeth).

Shrapnell, H. J., English anatomist (paper published 1832).—Membrane of (membrana flaccida).

Simon, Sir John, English surgeon (licensed 1838, living).—Femoral and brachial triangle of.

Skene, A. J. C., American gynæcologist, 1837–.—Skene's tubules (representative in female of vesiculæ seminales).

Soemmerring, Samuel T., German anatomist, 1755–1830.—Soemmerring's bone (part of malar); Soemmerring's foramen (retina); Soemmerring's ganglion (thalamus); Soemmerring's nerve (long pudic); Soemmerring's numbering of cranial nerves.

van den Spiegel, A., Professor of anatomy and surgery at University of Padua, born at Brussels, 1578.—Line of Spiegelius (linea semilunaris); Spiegelian lobe of the liver.

Stensen, Niels, Danish anatomist, 1638–1686.—Stensen's or Steno's canal, duct, and foramen.

Stilling, Benedict, German anatomist and surgeon, 1810–1879.—Nucleus of (nervus tegmenti); Canal of (centre of vitreous).

Swan, Joseph, English anatomist, 1791–1874.—Foramina of (for superior dental nerves).

Sylvius, Jacobus (Jacques Dubois), Professor of anatomy in Paris, 1478–1555.—Sylvian artery, fissure, and fossa; Aqueduct of.

Tarinus, P., French anatomist, died 1761.—Foramen of (hiatus Falloppii); Pons Tarini (posterior perforated space).

Tenon, J. R., French surgeon, 1724–1816.—Capsule of; Space of.

Thebesius, Adam Christian, German physician, 1686–1732.—Foramen of (in heart); Veins of (in heart).

Trolard, Paulin, Thesis in Paris, 1868.—Vein of (emptying into superior petrosal sinus).

Tulpius, Nicolas, Dutch anatomist, 1593–1674.—Valve of Tulpius (ileo-cæcal valve).

Türck, Ludwig, German physician, 1810–1868.—Türck's columns.

Turner, Sir William, Professor of anatomy in Edinburgh (English birth), 1832–.—Annectant convolution of.

Tyrrell, Frederick, English surgeon, 1797–1843.—Fascia of (recto-vesical layer).

Tyson, James T., American professor of pathology, physiology, and microscopical anatomy. Born at Philadelphia, 1841.—Glands of (prepuce and labia).

Valentin, Gabriel Gustav, German physiologist, 1810–1883.—Ganglion of (above second bicuspid).

Valsalva, A., Professor of anatomy at Bologna, 1660–1723.—Sinus of.

Varolius, Constanzo, Italian anatomist, 1543–1575.—Pons Varolii.

Vater, Abraham, German anatomist, 1684–1751.—Corpuscles of (Pacinian).

Verga, Andrea, Italian physician and anatomist.—Ventricle of (in fornix).

Verheyen, Philippe, German anatomist, 1648–1710.—Venæ stellatæ of (kidney).

Vesalius, A. (Belgian by birth), Professor of anatomy in Padua, 1514–1564.—Foramen, glands, ligament, and veins of.

Vicq D'Azyr, F., Professor of anatomy in Paris, 1748–1794.—Bundle of; Foramen of; White line of.

Vidius, Vidus (Guido Guidi), Florentine physician; professor of medicine in Paris, 1569.—Vidian artery (internal maxillary); Vidian canal, foramen, and nerve.

Vieussens, R., French anatomist, 1641–1716.—Valve of (brain); Ganglion of (solar plexus); Corpus album subrotundum Vieussenii (anterior tubercle of optic thalamus); Ansa of (sympathetic in neck).

von Wachendorf, Eberhard Jacob, Professor of chemistry in Utrecht (Membrane described 1740).—Membrane of (fœtal eye).

Walter, Johann G., German anatomist, 1734–1818.—Ganglion of (coccygeal).

Walther, Johann Adam, German physician (Diss. *De humanæ linguæ natura*, 1806).—Ducts of (sublingual).

Weber, Ernst Heinrich, German physiologist, 1795–1878.—Glands of (tongue).

Wernicke, Karl, German neurologist, 1848.—Fissure of (vertical fissure at end of fissure of Sylvius).

Westphal, Karl Friedrich, German physician, 1833–.—Nucleus of.

Weitbrecht, Josias (born at Württemberg), anatomist in St. Petersburg, 1702–1747.—Cord of, or ligament of (orbicular ligament of elbow).

Wernekink, .—Commissure of (decussation of præpeduncle in cerebellum).

Wharton, T., English anatomist, 1610–1673.—Wharton's canal and duct; Wharton's jelly.

Wilder, B. G., American anatomist (present time).—Fissure of (amygdaline, in brain).

Willis, Thomas, English physician, 1622–1675.—Circle of; Chords of (in superior longitudinal sinus); Nerve of (spinal accessory); Glands of; Numbering of cranial nerves.

Wilson, James Arthur, English physician and anatomist, 1795–1883.—Muscle of (constrictor urethræ).

Winslow, J. B. (a Dane), Professor of anatomy in Paris, 1669–1760.—Foramen of; Ligament of (knee joint).

Wirsung, Johann Georg, German physician, born in 1643.—Canal of (pancreatic duct).

Wolff, Kaspar Friedrich, German anatomist, 1733–1794.—Wolffian bodies.

Woolner, Thomas, English sculptor and poet, 1826–1892.—Woolner's tip (helical apex of ear).

Worm, Ole, Danish physician, 1588–1654.—Wormian bones.

Wrisberg, H. A., Professor of anatomy at University of Göttingen, 1739–1808.—Nerve of; Cartilages of; Ganglion of (heart); Ligament of (knee).

Wutzer, Karl Wilhelm, German surgeon, 1789–1863.—Ganglion of.

Zinn, Johann Gottfried, German ophthalmologist and anatomist, 1727–1759.—Ligament of; Corona of (arterial); Central artery of (retina); Zonule of; Membrane of (lamina iridis anterior).

Zuckerkandl, E., Professor of anatomy in Vienna (present time).—Convolution of (subcallosal).

The Third International Congress of Psychology will be held in Munich on August 4, 5, 6, and 7, 1896. The programme of work is as follows:

1. Psychophysiology.—Anatomy and physiology of the brain and of the sense organs (somatic basis of psychical life)—the development of the nerve centres; the theory of localization and of neurons; paths of association and structure of the brain—the psychical functions of the central parts; reflexes, automatism, innervation, and specific energies. Psychophysics: The connection between physical and psychical processes; psychophysical methods; the law of Fechner. Physiology of the senses (muscular and cutaneous sensibility, audition, light perception, *audition colorée*), psychical effects of certain agents (medicines). Reaction times. Measurement of vegetative reactions (inspiration, pulse, muscle-fatigue).

2. Psychology of the normal individual.—Scope, methods, and resources of psychology; observation and experiment—psychology of sensations; sensation and idea, memory and reproduction—laws of association; fusion of ideas—consciousness and unconsciousness; attention, habit, expectation, exercise—perception of space (by sight, touch, and the other senses); consciousness of depth-dimension; optical illusions—perception of time—theory of knowledge; imagination; theory of feeling; feeling and sensation; sensual, æsthetic, ethical, and logical feeling; emotions; laws of feeling—theory of will; feeling of willing and voluntary action; expressive movements; facts of ethics—self-consciousness. Development of personality; individual differences—hypnotism. Theory of suggestion; normal sleep; dreams—psychical automatism—suggestion in relation to pædagogics and criminality; pædagogical psychology.

3. Psychopathology.—Heredity in psychopathology; statistics—Can acquired qualities be transferred by inheritance?—Psychical relations (somatic and psychic heredity); phenomena of degeneration; psychopathic inferiority (insane temperament)—genius and degeneration; moral and social importance of heredity—psychology in relation to criminality and jurisprudence—psychopathology of the sexual sensations—functional nerve-disease (hysteria and epilepsy)—alternating consciousness; psychical infection; the pathological side of hypnotism; pathological states of sleep—psychotherapy and suggestive treatment—cognate phenomena: mental suggestion; telepathy; transposition of senses; international statistics of hallucinations—hallucinations and illusions; imperative ideas; aphasia; similar pathological phenomena.

4. Comparative psychology.—Moral statistics—the psychical life of the child—the psychical functions of animals—ethnographical and anthropological psychology—comparative psychology of languages; graphology.

Members who intend to take part are requested to announce the titles of their papers and to send short abstracts of the contents to the secretary's office, Max-Joseph Street, 2, Munich, before the 15th of May, 1896. These abstracts will be printed and distributed among the audience.

The length of the papers or addresses at the meetings of sections is limited to twenty minutes. Members are desired to give the chief points of their speeches (on a form which will be provided) during or at the close of the meeting, in order to insure a correct report.

The division of the sections will be arranged according to the papers or addresses which may be offered. The meetings will take place at the Royal University.

The languages used during the congress may be German, French, English, and Italian.

The *Tageblatt*, which will appear in four numbers, will contain a register of the guests, also information as to accommodation, the programme of the papers and addresses and social arrangements, the list of members, and a short notice of the places of interest in Munich.

The subscription to be paid by those desiring to take part in the congress is fifteen S. [shillings?]. On receipt of this sum a card will be sent to every member entitling him to attend all the meetings, and to receive the *Tageblatt* and a copy of the report of the congress. The card also admits him to all festivities in connection with the congress and all special privileges.

Information in regard to the programme of work will be given by the following members of the local committee: Psychophysiology—Dr. Cremer, Findlingstrasse, 10*b*/2, Munich. Psychology, etc.—Dr. Weinmann, Leopoldstrasse, 5, Munich. Psychopathology—Dr. Grashey, Auerfeldstrasse, 6/1, Munich. Comparative psychology—Dr. Georg Hirth, Luisenstrasse, 14/1, Munich.

Amputation at the Hip Joint.—At a meeting of the Section in General Surgery of the New York Academy of Medicine, held on Monday evening, December 9th, Dr. F. Tilden Brown read a paper entitled A New Method of Hip-joint Amputation. In the discussion Dr. Robert H. M. Dawbarn said that for many years he had advocated "hamstringing" the limb at the outset in all thigh amputations. These amputations, as ordinarily done, he said, left a stump full of holes and "dead spaces," because some of these muscles, when cut, might contract even inches farther than others did, though all might have been divided at one and the same level. The *suture en étage* had been devised to overcome this defect: sewing together the muscles, often in several tiers of sutures, before the skin sutures were reached, in order to get a solid stump thereby. If, now, after "milking" out the blood from the elevated limb, and even before the Esmarch bandage or rubber tube was applied, the surgeon divided with two bold strokes the tight hamstring tendons, he would cut all the muscles which contracted farthest. And now, when he did the amputation, he would, of course, have a much smoother stump-end, for all the muscles would now remain about at one and the same level. The anatomical reason was obvious—all the fine hamstring muscles, save a part of one of them, had no attachment to the thigh bone, but simply passed over it on their way from the pelvis to the leg. These muscles, when cut, contracted a long distance. All the rest of the thigh muscles, being bound down by long insertions into the thigh bone, could not, of course, contract far when cut at any point. If we "hamstringed" the patient, we divided those muscles which ordinarily would contract farthest.

Cheap Life-insurance Examinations.—At its recent annual meeting the Marion County, Florida, Medical Society adopted the following preamble and resolutions:

Whereas, The various life-insurance companies throughout the United States have reduced the fee for medical examinations from five to three dollars.

Resolved, That the members of the Marion County Medical Society refuse to make such examinations for less than five dollars.

Resolved, That this preamble and resolutions be spread upon the minutes of the society and published in the medical press of the United States.

The New York Academy of Medicine.—At the last general meeting, on Thursday evening, the 19th inst., a paper entitled Vaginal *versus* Abdominal Section was to be read by Dr. W. M. Polk.

THE NEW YORK MEDICAL JOURNAL, December 28, 1895.

Original Communications.

LUMBAR PUNCTURE OF THE SUBARACHNOID SPACE.*

By GEORGE W. JACOBY, M.D.

The subject which I have chosen for consideration in this paper is one of the questions of the day, and yet has until now not been the topic of discussion in any English-speaking society.

When in 1891, at the Tenth Congress of Internal Medicine, Quincke, in a communication entitled Hydrocephalus, spoke of a method of withdrawing fluid from the cerebro-spinal cavity without opening the skull, it was little thought that within four years this procedure, which can not but be characterized as simple, would take its place among the recognized diagnostic methods in medicine, and possibly form the stepping-stone to local treatment of the brain and cord.

Quincke having previously attempted to reduce the cerebral pressure caused by hydrocephalus, using the term in its symptomatic significance, by puncturing the ventricles through the brain, was on account of the difficulties and complications connected with this method led to seek some other means of accomplishing his object. From an experimental work published in 1872 he knew that it was not difficult by means of a hypodermic syringe to inject fluid into the subarachnoid space without previously opening the spinal canal; he furthermore knew that by the injection of red sulphide of mercury into this subarachnoid space it was easy to demonstrate that free communication exists between the subarachnoid space of the brain and that of the spinal cord, that the entire arachnoid of both cord and brain forms, so to say, a continuous sac.

He was also aware that *intra vitam* there existed in the fluid contained in this sac a continuous current in both directions, as shown by the fact that particles of color are carried from the spinal cord to the brain as well as from the brain to the spinal cord. The knowledge thus gained from experimental work led him to substitute the hypodermic needle for the awl holes and trephine openings previously used, and to transfer the seat of operation from the skull to the lower part of the spinal column.

In this communication to the congress he speaks of having operated upon ten patients—five male and five female—making in all twenty-two punctures, the object of the operation in all these cases being the reduction of a supposed increase of intracranial pressure.

Two years later, at the Twelfth Congress for Internal Medicine, von Ziemssen reported his own experience with this new method, and expresses it as his opinion that it is a potent means for reducing brain pressure, and speaks of sixty, seventy, and even ninety cubic centimetres of cerebro-spinal fluid being thus removed without unfavorable complications. While von Ziemssen does not give the number of cases upon which his conclusions are based, in the discussion which followed the reading of his paper Quincke spoke of having operated forty-one times upon twenty-two patients.

About this time Lichtheim called attention specially to the value of the spinal puncture as a diagnostic aid in the recognition of the various forms of meningitis. To him undoubtedly belongs the honor of recognizing the important features which the method presents from a diagnostic point of view.

For a couple of years thereafter the matter lay dormant, until in this year Fürbringer was able, in an exceedingly clever and practical article, to report the results of eighty-six cases with over a hundred single punctures.

It is this work of Fürbringer with the ensuing discussion and the other articles which immediately followed its appearance, which have done much to bring the topic into public view. The entire subject is still so new, outside of Germany so little has been said about it, that it will not be amiss if I go somewhat into detail in speaking of the operation itself and of its diagnostic and therapeutic value.

My practical experience with the method covers a period of about six months, and the number of cases operated upon runs up to more than thirty-five, with as many as seven punctures in a single case.

The cases of which I have more or less complete notes may be classified as follows: Cases of supposed tubercular meningitis, 17; purulent meningitis, 1; meningitis with abscess, 1; tumor, 6; hydrocephalus, 4; ventricular hæmorrhage, 1; spinal hæmorrhage, 2; acute mania, 3. Of certain other cases which I have punctured no record has been kept.

It can not be my purpose to enter upon the details of all these cases, but simply to give the impressions and convictions which I have gained from this experience, and here and there to describe a case which will corroborate or add to the facts collected through the work of others.

The procedure of puncture of the spinal sac is based upon two facts: First, that the subarachnoid spaces of the brain and spinal cord communicate with each other and with the ventricles of the brain, and secondly, that the spinal cord reaches in the adult to the second, and in children a year old only to the third, lumbar vertebra; that therefore a needle passed into the third or fourth interlaminar space can not strike the cord, but passes among the floating nerve roots of the cauda.

The object of the operation may be twofold: to evacuate fluid which has abnormally accumulated in the arachnoid sac and cerebral ventricles, or to obtain some of this fluid for purposes of examination. Both of these objects may, of course, be combined. The operation, as I have carried it out, is as follows:

An ordinary aspirating syringe is selected, with a hollow needle attached. The needle may be used alone, but the syringe serves as an excellent handle and is useful for aspirating the first few drops of fluid.

If thick needles are used, as may sometimes be necessary, a needle with a stylet is to be preferred. A firm, smooth aspirating needle of a millimetre to a millimetre and a half in diameter and eight centimetres in length is what I have used in my later punctures. Short needles are to be avoided, as in many instances we are astonished at the depth to which we must go before the dura is reached.

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* Read before the New York Neurological Society, November 5, 1895.

A special needle or instrument is entirely superfluous.

Strict asepsis, sterilization of the needle, etc., is, of course, self-understood.

The place of entrance is then selected and marked by a slight indentation with the thumb nail. The selection of the place is generally very easy, particularly if we are dealing with emaciated children; but if the subject is at all corpulent, counting the vertebræ becomes difficult and may become impossible. The vertebræ can be counted only if the spinal column is straight or convexly flexed; if it is concave, we can neither count the vertebræ nor introduce the needle between them. It is always well to count the vertebræ from below upward, starting at the sacrum, and then to control this by counting from above downward, starting from the seventh cervical.

A second control, and one which has never failed me, is that a line drawn across and joining the highest point of both cristæ ilii will pass through the centre of the fourth lumbar vertebra, so that the first spinous process felt in going upward from this line is that of the third lumbar vertebra.

The place to be selected must be between the third and fourth or between the fourth and fifth lumbar vertebræ, about five millimetres laterad from the median line. Entrance is more easily effected in the first of these localities.

In children we can, as Quincke has shown, puncture directly in the median line on account of the difference in bony formation, and because the bundle of nerve roots is not only less dense than in the adult, but also because this bundle here is generally divided into two symmetrically placed strands, which, through their division, leave a space of five millimetres or more between them which is occupied by fluid alone.

My preference, even in children, is for the lateral place, as the ligamentum interspinale is often so tough as to make the employment of considerable force necessary in order to effect an entrance. This employment of force is to be deprecated, inasmuch as the finer sense of touch becomes dulled, and the needle is then no longer under our absolute control.

The question of narcosis is one which can be decided only in each individual case.

While Naunyn, Lichtheim, and Fürbringer consider its employment unnecessary, it is positive that in certain cases —those, for instance, with marked spasm of the dorsal muscles—the use of an anæsthetic can not be avoided, and in very restless patients such employment is exceedingly serviceable.

In my opinion, when operating upon the adult, unless the patient is in a partially or completely stuporous state, the use of an anæsthetic is always indicated, for any sudden movement forward will straighten out the spinal column, and thus either prevent the needle from entering the interlaminar space or, if the needle has already been pushed in that far, is liable to so compress it between the vertebræ as to break it in two.

In order to obtain the posterior convexity of the spinal column which is necessary for the puncture, the patient may either lie upon the side, with the head and shoulders bent well forward and thighs flexed upon the abdomen, or he is placed in a sitting posture, with an attendant holding his arms and drawing his head and shoulders forward, or, finally—but this applies only to children—the patient may be taken across the knees of an attendant, who with each forearm presses down the pelvis and upper part of the spinal column, while with the knees he forces the median part upward. My preference is for the latter postures, the sitting one for adults and that across the knee for children, as in both of these we can absolutely control all unexpected movements of the patient. The needle is now slowly pushed forward, feeling the way as we go. The relation of the parts to each other is not always the same, and we must often search for the opening with the needle; even with all care, it is not always possible to avoid striking the edge of the vertebral arch, or, if the soft parts are very tense, to use so much force as to enter the body of the vertebra. I have thus twice bent the point of my needle, and the possibility of the point breaking off and remaining in the bone is not at all a remote one.

The depth to which the needle must be pushed in order to puncture the dura is given by Quincke at from two to six centimetres; but in view of a case of Goldscheider's in which he had to go in eight centimetres before fluid was obtained, it is better to extend these limits to include this number.

As soon as the needle has entered the sac the fluid begins to flow, either drop by drop or in a slight stream, according to the pressure to which it has been exposed. This pressure may be measured by connecting the needle with a manometer, and has been found by Quincke to vary in children from seventy to four hundred and seventy millimetres; in adults, from one hundred and fifty to six hundred and eighty millimetres. The normal pressure in the adult is probably one hundred and fifty millimetres. When the flow slows down, it in the majority of cases does not exceed four drops in a minute.

Inspiration retards the flow while expiration accelerates it, and, contrary to the statement made by others, elevating the head, in my experience, also increases it. So, also, at variance from Quincke, I have found the character and rapidity of the pulse to be altered in some cases of brain tumor and meningitis. Occasionally the flow ceases, and a change in the position of the needle will re-establish it. In such cases the opening of the needle has probably become obstructed by a floating nerve root.

The amount of fluid to be withdrawn will be indicated in each individual case by the object desired to be attained. Fürbringer has withdrawn as much as one hundred and ten cubic centimetres at a single puncture. The pain entailed by the operation is not great if the fluid is allowed to flow of itself; if aspiration of the fluid is practised, the pain, especially headache in cases of brain tumor, becomes almost intolerable. For this and for other reasons aspiration should only be made use of in the beginning, and a small quantity of fluid (three to five cubic centimetres) thus removed. In removing large quantities of fluid the syringe should be disconnected from the needle as soon as we are satisfied that the dural sac has been entered. The great pain caused by aspiration, as well as the varying amount of fluid obtained in different cases, Stadelmann explains by assuming a closure or narrowing of the apertures leading to the fourth or to the third ventricle. If this obstruction is caused by pathological processes, the flow of fluid from above downward can take place only very slowly through the patent lymph fissures, and the brain, after the removal of the cerebro-spinal fluid, will be drawn to the dura, pressed against the skull, and thus the intense headaches are brought about.

Accidents or untoward occurrences during the puncture are exceedingly infrequent. Besides the cessation of flow due to obstruction of the needle, occasionally no fluid at all or only a drop or two can be obtained, although the needle is surely in the dural sac. Whether this occurrence is not always due to some pathological condition is as yet undecided; then again the fluid may be somewhat discolored by blood, owing to injury of the vertebra; this accident, while not always avoidable, is to be deprecated on account of the impairment of the fluid for diagnostic purposes which it entails, the patient being in no wise affected by it.

In one case I obtained five cubic centimetres of pure dark blood instead of cerebro-spinal fluid, undoubtedly from puncture of a spinal vein, for upon the second attempt I had no difficulty in getting clear fluid. Fürbringer has in one case, as immediate result of the puncture, noted marked symptoms of irritation, pain, and numbness in one leg, lasting for two days, probably due to slight injury of a nerve root, while in another case at the moment the needle was introduced one lower extremity twitched strongly.

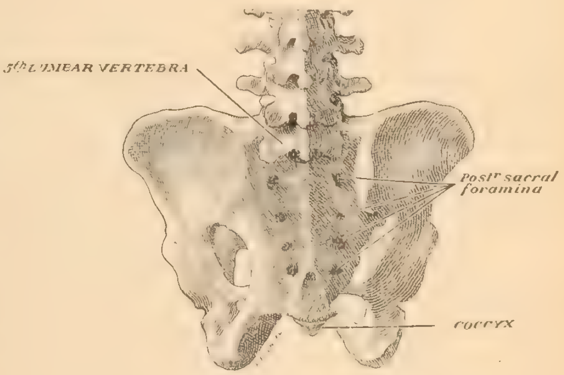
The danger of air entering the cannula is nil if the needle is withdrawn while the fluid is still running. Infection can, of course, be avoided with proper care. Whether the untoward occurrences not at the time of, but after the puncture, such as those reported by Lichtheim and Fürbringer, were due to the removal of fluid is doubtful, but the warning sounded by Stadelmann is one which should receive well-considered attention. Stadelmann, while fully acknowledging that a direct communication of all ventricular cavities with the subarachnoid and subdural cavities exists, nevertheless lays stress upon the fact that a cerebral meningitis may exist as such for a long time without implicating the spinal membranes, as shown by the frequent finding upon autopsy of a more or less circumscribed meningitis, with complete freedom from inflammation in the ventricles and on the cord. Why the infection carriers in such cases were not brought into these places we do not understand, unless the normal current in the cerebro-spinal fluid is so inactive as not to be able to transport these infection carriers through the various communicating openings. By means of the puncture an increase in the activity of this current must be set up, and with this increased activity in the flow must also go hand in hand an increased transport of infection carriers, and thus under certain circumstances a local meningitis be converted into a general one.

In removing the needle it will be found that considerable pressure must be overcome, and occasionally more force is here necessary than was employed in entering; this is not due to the needle having become wedged in between the vertebræ, but is due to the pressure upon the needle caused by the crossed fibrillar construction of the fascia.

The after treatment is of the simplest kind: Remove the cannula, apply a little iodoform collodion to the puncture, and then fasten a compress of cotton with adhesive plaster or a roller bandage. It is well to keep the patient in a horizontal position for several hours after the operation. All in all the operation is so simple as hardly to merit the name, but, simple as it is, it requires a certain amount of practice.

A knowledge of depth of puncture, size of opening, and amount of force necessary can only be thus gained; in fact, it is advisable for every one, before attempting the puncture upon a patient, to carefully study the anatomical relations upon the cadaver.

This having been done, there is no more difficulty and no more danger connected with the operation than, as Fraenkel puts it, there is in opening a deep-lying abdominal abscess. The accompanying illustration gives a good idea of the skeletal apertures.



Therapeutics.—Chiefly from observations of chronic hydrocephalus, which has often been the object of various forms of operative treatment, we know that we can remove the fluid, which by its pressure, even if the fontanelles are open, interferes with the conductivity of the conducting tracts and exerts a deleterious influence upon the development of the brain. That many other troubles are attended with an increase of intracranial pressure, and many symptoms are undoubtedly due to such increased pressure—that, in fact, in many cases relief from such pressure is urgently demanded—is certainly true. Therefore, aside from any curative value, we would welcome any method which would furnish us with a certain and easy means of removing fluid from the cavities of the brain and thus decreasing the pressure there exerted.

That this can be done by means of lumbar puncture is certain. Whether more can be accomplished is as yet questionable. Hydrocephalus, acute and chronic, meningitis (serous, tubercular, alcoholic, and cerebro-spinal), encephalomalacia, chronic myelitis, tabes, and subdural spinal hæmorrhage have all been treated by means of lumbar puncture, without other result than transient relief of certain symptoms. As regards the nature of this transient relief, it may be said that in a case of cerebro-spinal meningitis treated by von Ziemssen the removal of sixty and seventy cubic centimetres of fluid at various intervals was attended by relief from headache for several days after each puncture; in hydrocephalus, Fürbringer, Heubner, and Ewald report temporary amelioration after the puncture, epileptiform convulsions becoming less frequent in Fürbringer's case, and marked general improvement occurring in the others.

In my cases, beyond the relief of headache in cases of brain tumor, the only change noted was in cases of meningitis an increase in the rapidity and gain in strength of the pulse, and in some cases the children became brighter, spoke a few words, putting out their tongue when told to, and even swallowing food. In a single case there was change in the pupils after the puncture, they becoming equal. The larger one became smaller.

That brain pressure is actually reduced in these cases can, when the fontanelles are open, be plainly demonstrated without measurement, for the outward curving and tension of the scalp over the fontanelles disappears and becomes replaced by a concavity and retraction. In brain tumor my experience coincides with that of Fürbringer, that immediately following the operation there is an increase of headache to an extent which is almost unbearable. One of my patients with tumor of the cerebellum, who had had such headaches for months that he could obtain relief only through recourse to morphine injections, said that he had never experienced such pains before as those immediately following the operation. This exacerbation of pain usually lasts for about fifteen minutes, then to gradually subside and to give place to comparative freedom from pain, which is maintained for several days. In one case I made seven different punctures, each puncture being followed by the same result; in fact, it has seemed to me that the later punctures give more relief than the early ones.

I have in one case—the cerebellar tumor above referred to—also noted an increase in the pulse-rate after each puncture, the pulse rising from 40 to 50 to 70 to 80, this increase, however, not being maintained longer than twenty-four hours. In no case was the neuroretinitis in any way affected. On the other hand, Lichtheim in three cases of brain tumor did not obtain even transitory relief of any nature whatsoever.

In a case of compression myelitis, Goldscheider, in order to reduce the contractures and painful reflex contractions, repeatedly injected a sterilized solution of cocaine into the dural sac, but absolutely without any benefit. Whether the improvement following the puncture in two of my cases of spinal meningeal hæmorrhage was in any way due to the operation is a question to which I will refer further on. Two cases of Fürbringer's in which no positive diagnosis was arrived at are particularly interesting on account of the improvement attained. The first case was that of a male, aged sixteen years, who presented himself with a right-sided hemiparesis, weakness of both abducentes, very severe headache, slight dizziness, and bilateral choked disc. After the puncture, a large amount of fluid having been removed, headache disappeared, the neuritis optica retrograded, and an apparent cure took place.

In the second case—a child, aged six years, with head and cervical ache for eight weeks, marked weakness of both lower extremities, the child not being able to stand or walk, loss of patellar tendon reflexes, and bilateral choked disc—marked improvement occurred after removal of a large amount of fluid.

Goldscheider also speaks of a case presenting symptoms of meningitis which gradually got well after the removal of eighty cubic centimetres of fluid. Of course in this class of cases it is difficult to say whether there was any relationship of cause and effect between the removal of fluid and the recovery, and we must, in the exercise of our judgment, not fail to consider that all cases presenting marked symptoms of meningeal irritation are surely not cases of meningitis. We well know that after various acute infectious diseases, particularly during the course of an influenza, cases occur in which anorexia, vomiting, constipation, insomnia, delirium, severe pain in the head and neck, with cervical stiffness, and even inequality of the pupils occur, which completely recover in a very short period of time.

So one of my patients with supposed meningitis—a child four years of age—in addition to the above-mentioned symptoms, which had existed for about a week, had had one convulsion and various minor convulsive seizures, and was at the time of puncture in a semi-comatose condition. Sixty cubic centimetres of a clear serous fluid, free from organisms, was withdrawn; soon after the puncture the pulse rose from 80 to 112, and the pupils became equal. The following day the temperature was normal; the child answered questions and took food. Convalescence, with the exception of several rises of temperature to 101° and 102° F., was uninterrupted, and in a week the child had entirely recovered. That this could not have been a case of meningitis is probable. But in cases in which the diagnosis was certain, transitory palliative effects, such as already described, with temporary freedom from pain and apparent prolongation of life, have been attained; now, if in addition to this it remains possible, no matter how remote the possibility, that cases of simple meningitis have been cured by this procedure, the question is unwittingly forced upon us whether in cases of tubercular meningitis this method does not furnish us with a means of attaining some benefit.

Practically, I have as a result of the puncture seen nothing but the slightest ameliorations in this affection, and even these were rare. This experience agrees with that of Lichtheim, Fürbringer, and von Ziemssen, and also seems to be the opinion of others who have removed the fluid in a different manner, either through the skull or from the cervical region by means of laminectomy. Should we therefore in the face of all this ill success continue our trials of tapping in tubercular meningitis? It certainly is tempting in cases of this class, in which coma supervenes with great rapidity and with all the signs of high cerebral pressure, to make an attempt to relieve this pressure, particularly as we frequently in these cases post mortem find nothing to account for the symptoms and the fatal issue than an excess of cerebro-spinal fluid.

I would not have it inferred from these remarks that it is my opinion that death in these cases is due to pressure; on the contrary, the absence of marked lesions in the brain substance would lead us to seek for some other cause of death, and it is not at all certain that we are not in these cases dealing with death due to absorption of toxines rapidly produced. If this were so, all the more reason why we should look about us for some method of removing these toxines, the absorption of which certainly must bear a part, and not an unimportant one, in the outcome of the disease. Is there any evidence before us that tubercular meningitis can be cured, or, to put it in another way, that patients suffering from this disease ever recover? We all know that the generally accepted opinion is that a diagnosis of tuberculous meningitis is equivalent to a death warrant, and that reporters of cured cases of tuberculous meningitis have been looked upon askance, the correctness of their diagnosis always being doubted. And this doubt is justified until proofs of the tubercular nature of the disease can be furnished. Even so well observed a case as that reported by Ord and Waterhouse, in which drainage had been effected by means of a tube inserted through a trephine opening into the subarachnoid space, can notwithstanding the clear clinical symptoms not be accepted as proof of any value.* The missing link has here been furnished by Freyhan, and the argument that a case is not one of tubercular meningitis because it recovers is now shown to carry as little weight as did the same statement formerly when applied to tubercular peritonitis.

Freyhan's case was that of a male, twenty years of age, without hereditary taint or history of previous illness. He became suddenly ill, with chills, fever, drawing in the legs, and pains in the frontal and occipital region day and night.

Upon examination, three days after this onset, consciousness was obscured, restlessness and jactation marked. Temperature, 37·4 C.; pulse, 72, rising to 116, and then again falling to 96; respiration, 24. Extremities, nose, and ears cyanotic. Nothing discoverable in the lungs; heart normal; head constantly in opisthotonus position, the entire spine stiff and painful; complete stiffness of cervical region so that passive movements were not possible; lateral nystagmus; twitchings in the facial territories; pupils equal, dilated, reacting sluggishly. Bilateral neuritis optica. The symptoms gradually increased, paralytic symptoms supervening upon the irritative ones. Coma set in. Urine passed involuntarily. Lumbar puncture was carried out, and sixty cubic centimetres of a slightly turbid fluid was discharged in a stream. The fluid was received in a sterile glass and microscopically tubercle bacilli were found. A week later a second puncture was made with the same result. After the first puncture there was a remission in the symptoms, gradual improvement set in, and reconvalescence became established.

In view of such a case, even if it does as yet stand alone, we must relinquish the skeptical position which we have thus far held, and acknowledge at least the possibility of recovery from tubercular meningitis.

Endeavors to prolong the flow of cerebro-spinal fluid will be efforts in the right direction in so far as they tend to transform the temporary effects of the puncture into more or less permanent ones, and thus to increase the chances of recovery. Quincke himself had already attempted to prolong the flow by making a slit with a lancet-shaped needle instead of a simple puncture in the dura, and various methods, as laminectomy with incision of the dura mater of the cervical cord, with and without the introduction of a horsehair drain, have been used by others with this object in view. If, therefore, therapeutic results are to be attained, we must above all, and before entertaining such questions as increased pressure, accumulation of toxines, etc., consider as to how much patency or obstruction of the communications between the fourth ventricle and the subarachnoid space of the brain exists under normal and pathological conditions, as the practicability of achieving such results by means of spinal puncture will depend primarily upon these factors.

The assertion has been made that, inasmuch as in the majority of instances the amount of fluid removed does not exceed twenty cubic centimetres, it is probable that we thus remove the contents of the spinal part of the sac alone, and that the above-mentioned apertures in these cases must be blocked, or that after all there is no communication between the spinal sac and the ventricles of the brain. Charles A. Mortòn, in many normal and pathological cases, has always found the apertures free, and I in two autopsies upon children that succumbed to a tuberculous meningitis, in both of whom *intra vitam* I had by spinal puncture been able to obtain only from twenty to thirty cubic centimetres of fluid, found perfectly free communication between the spinal and cerebral cavities.

The best method of making such examinations is that recommended by Morton; if this method is employed, it will be found that the openings to the fourth and third ventricles and the communication between the lateral ventricles and the subarachnoid space (foramen of Magendie and small foramina in that part of the membrane which projects dorsad into the fourth ventricle) are exceedingly rarely obstructed.

The amplitude of these communications between the various cavities is shown clinically by the retraction of the scalp over the fontanelles in the puncture of hydrocephalus; while experimentally, the freeness of this communication can also be easily demonstrated. My first experiments were carried out partly for the purpose of corroborating those of Quincke, and partly to satisfy myself as to how easily fluid could be made to pass from the spinal sac into that of the brain.

The first of these experiments was made upon an anæsthetized rabbit. Through the needle introduced into the lumbar subarachnoid space was injected a solution of methylene blue, a considerable amount of force being necessary. After no more fluid could be driven through the needle, this was withdrawn, the animal killed, and the fluid found to have been forced up only to the cervical cord, the subarachnoid space of the brain and the ventricles being entirely free from coloration.

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* This the authors themselves clearly recognize, for the case is published as A Case Diagnosticated as Tubercular Meningitis.

Thinking that the amount of force necessary to inject the fluid was caused by the positive pressure which exists *intra vitam* and which must be overcome, I then tried the same experiment upon a corpse, the calvarium being intact. Here also it was not possible to use sufficient force to drive the methylene-blue solution higher than the cervical cord.

Von Ziemssen also, in the body of a patient who had succumbed to a cerebro-spinal meningitis accompanied by colossal hydrocephalus, injected sixty cubic centimetres of fluid colored with methyl violet into the subarachnoid space of the lumbar cord, and upon autopsy could follow the coloration only to the cervical cord.

It being therefore demonstrated that the active pressure exerted upon the cerebro-spinal fluid *intra vitam* is not the sole obstacle to the free introduction of fluid, there remained the possibility that the communication between the spinal and the cerebral subarachnoid cavity was not as free as we had been led to assume. The following experiments were considered crucial in the decision of this point:

Upon the corpse of a middle-aged man, who had died from chronic cardiac disease, the skullcap was first sawed through and several incisions made through the dura into the subarachnoid space; then a spinal puncture was effected between the third and fourth lumbar vertebræ, and upon aspiration pure cerebro-spinal fluid obtained. With a fountain syringe about two hundred and fifty grammes of a solution of methylene blue were injected; no pressure was necessary beyond that supplied by the elevation of the syringe about twelve inches; the head of the body being placed lower than the pelvis, the fluid entered through its own weight; it was, so to say, infused. In about half a minute after infusion the blue fluid became visible in the subarachnoid space of the brain at the places where the incision in the dura had been made. The autopsy was then carried out and the entire subarachnoid space of the brain and all the ventricular cavities were found flooded with the blue solution. Now the infusing process was reversed: a drainage-tube was placed in the one lateral ventricle and a solution of permanganate of potassium injected through it; almost immediately there came out of the needle, which still lay in the lumbar space, first pure methylene-blue solution, then a colorless fluid, the methylene solution decomposed by the permanganate of potassium, and shortly afterward the unaffected permanganate solution.

All these experiments have been carried out repeatedly, and always with the same results. Finally, a large dog was anæsthetized, and this same experiment with a drainage-tube in the lateral ventricles and a needle in the subarachnoid space was carried out. The difficulties, beyond the purely technical ones of the operation, were not any greater here than on the cadaver, and the same results were obtained. Unfortunately, the dog died before he came out of the narcosis, and I have since then had no opportunity of repeating the experiment.

It being thus definitely settled, anatomically, clinically, and experimentally, that a free communication between the cerebral and spinal cavities exists, we are warranted in making use of the spinal puncture as a therapeutic method, and if the results thus obtained are unsatisfactory, in utilizing the punctures as the first step to some further procedure.

That curative solutions can thus be introduced into the subarachnoid space, and a local therapy of the cord and brain be thus inaugurated, as von Ziemssen has suggested, is no doubt true, but it seems to me that much more will be achieved by extending our efforts in the direction of the more permanent removal of pathological fluids and with them of pathogenic micro-organisms,

Continuous drainage has been tried by Sahli by means of puncture with a thick cannula, introducing a semi-stiff catheter through the cannula, and then by withdrawal of the latter leaving the catheter in place, as well as by the introduction of a metal cannula specially constructed for the purpose of being left *in situ*.

Also Wynter has reported four cases of tubercular meningitis in which a rubber tube was inserted into the dural sac of the lumbar region and the cerebro-spinal fluid allowed to flow away.

The difficulty of keeping up the flow by these methods seems to lie in the facility with which the catheter becomes bent and the cannula obstructed. In cases of tuberculous meningitis, cases in which a fatal outcome is to be expected in nearly every instance, in which two indications are to be met, the relief of pressure and the removal of the toxine-producing bacilli, I, in view of my experiments, see no reason why the entire cavity could not be, without great danger, so to say, flushed and washed out by means of puncture in the lumbar region and a drainage-tube placed in one of the lateral ventricles of the brain. I should, following Keen, select the lateral route and make a trephine opening an inch and a quarter behind and an inch and a quarter above the meatus, then puncture the brain, as advised by him, and thus reach the lateral ventricle. Then, making a lumbar puncture, the entire cavity could be thoroughly drained and even washed out with a physiological salt solution. This idea is simply going a step farther than Keen has actually gone in trephining the skull upon both sides, puncturing, and then washing out the lateral ventricles from side to side with a boric-acid solution.

Whether anything is to be expected or not from this or some other procedure in the future, for the present we must state that the therapeutic results of spinal puncture have been very slight, and that all in all from the puncture alone little beyond temporary palliation of certain symptoms is to be expected.

(*To be concluded.*)

A Letter Signed "A Subscriber" has been received at the office of this journal. The writer is respectfully reminded that he should furnish us with his name—not, of course, for publication.

GASTRIC LAVAGE WITH A CONTINUOUS CURRENT.

AN IMPROVED RECURRENT STOMACH TUBE, WITH HISTORY AND TECHNICS OF THE SUBJECT.

By JOHN C. HEMMETER, Ph. D., M. D., etc.,
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A brief abstract of the history of the development of the stomach tube was given in an article by the author in this journal (vol. lxi, No. 13) for March 30, 1895, containing an account and illustrations of An Apparatus for Washing out the Stomach and Sigmoid with a Continuous Current with Return Stomach or Rectal Tube. In the present further contribution to the subject the author desires to publish a more complete and practical instrument, the description of which will be supplemented by additional remarks concerning the history of the stomach tube, and a statement of the technique of its more modern applications, indications, and contraindications.

In a recent trip to German and French digestive pathologists it was evinced that a practical return stomach tube would find a wide field of utility.

In many modern works on gastric disorders the original application of the single stomach tube in the treatment of certain gastric diseases is so unreservedly conceded to Kussmaul that this investigator is almost universally considered the inventor of the lavage tube and of the stomach pump. Kussmaul undoubtedly is a man of exceptional ingenuity and versatility, and a pioneer in this field of therapeutics, as his best-known first publication on this subject shows (*vide* reference No. 1). A careful study of the literature of the subject will show, however, that stomach tubes were scientifically used long before Kussmaul's publication in 1869.

According to Leube (*vide* reference No. 2) and Ewald (No. 3), gastric lavage was carried out and recommended by Bush in 1822 (*vide* No. 4), Arnott, 1829 (No. 5), Sommerville, 1832, Blutin, 1832. In Canstatt's *Text-book* (No. 6) the method is recommended as a treatment for gastrectasia. This work was published in 1846. Fabricius ab Aquapendente (7) used an œsophageal bougie or sound to push foreign bodies down into the stomach when they had caught in the œsophagus. The idea of the modern stomach tube, according to Leube (*loc. cit.*), probably had its origin in the *pinna* of the ancient Romans, which was simply a long feather with which the throat was irritated until emesis occurred. "The Roman gourmands knew the bad digestive consequences of their bacchanalian feasts very well, and sought means to avoid the isastrous after-effects of their carousals." As these uncomfortable results do not occur until the ingested food undergoes a certain digestion and transformation, they could be avoided by removal of the stomach contents after all the pleasures of the banquet had been enjoyed. For this purpose emetics were occasionally used, but the *vomitivum*, which was taken at dessert, seems to have been an unpleasant and doubtful means for evacuation of the stomach. Often the dose was too small, an annoying nausea the consequence. Then, again, too much of the *origanum thymian*, or similar emetics, was drunk, and the vomiting would take no end, although the stomach was empty long ago.

So the efforts were in the direction of some mechanical means of causing emesis more comfortably.

Running the finger down the throat was in most cases sufficient. It soon became customary to use the *pinna* or vomiting feather, for this purpose, however. Emperor Claudius had the custom of allowing his throat to be irritated with the *pinna* until he vomited (cf. *C. Suetonii Tranquilli Opera*, Claudius, cap. 33: "Nec temere unquam triclinio abscessit, nisi distentus ac madeus et ut statim supino ac per somnum hianti pinna in os inderetur ad exonerandum stomachum.") And it was with such a vomiting feather that Claudius was poisoned, according to the order of Agrippina, by his physician, who irritated the emperor's throat with a poisoned feather (Taciti *Annales*, liber xii, cap. 67: "Ille medicus tanquam nisi evomentis adjuvaret, pinnam rapido veneno illitam faucibus ejus demisisse creditur.")

According to Aristophanes (Scholia *ἐιώθασιν οἱ θυσεμοῦντες πτερῷ χρῆσθαι πρὸς τὸ ἐυχερῶς ἐμέσαι*) and Nicander (*vide* 8), the celebrated Alexandrian physician, a similar method of emesis was practised in Greek antiquity.

Oribasius (9), the celebrated historian of ancient medicine in the fourth century (A. D.), gives an exhaustive account of the methods to produce emesis used in those days. In his descriptions we note the fact that the candidates for emesis were laid on a suspended bed, which was swung and shaken until an artificial seasickness was brought on. He also recommends the use of eight to ten goose feathers dipped in iris oil or cypress oil, in place of the finger, to produce vomiting. His most remarkable statement is a description of a long leather glove-finger, about ten to twelve inches in length; the lower two thirds are directed to be stuffed out with woolen fibre, while the upper third is to remain empty to receive the directing finger of the physician. This digital *vomitorium* was lubricated with the oils referred to and introduced into the œsophagus. This instrument Leube (*loc. cit.*) considers the most primitive form of the stomach sound. The writings of Oribasius (*loc. cit.*) contain some very important details on this method. Further historical facts concerning primitive stomach sounds are found in the writings of Avicenna in the eleventh century (10). In his work on poisoning, Hieronymus Mercurialis (11) recommends the use of a *lorum vomitorium* to produce emesis. This instrument, which was specially recommended for opium poisoning by Scribonius Largus (12), is an obscure contrivance, supposed by Leube to have been a leather strap treated with nauseating tannic-acid-containing substances, and producing emesis by its disgusting taste when introduced into the œsophagus.

All of these old contrivances—the *pinna*, the digital *vomitorium* and the *lorum vomitorium*—served but one purpose, the evacuation of the stomach. The next step in the progress toward the modern gastric tube was the extraction of foreign bodies from the œsophagus. The oldest instruments known to have been used for this purpose are short metallic tubes with holes to catch the foreign bodies (fish bones, etc.).

A small lead tube with holes in it was the special device of Joh. Arculanus (12). Ryff (13) used the same thing made of silver, as did also Scultetus (14). The latter writer attributes to Gulielmus Fabric. Hildanus (15) great skill in removing foreign bodies with a tube to the lower end of which a piece of sponge as large as a hazelnut was tied. Fabricius ab Aquapendente went one step further in this matter in advocating the pushing down of foreign bodies into the stomach when they could not be extracted through the mouth.

Up to this period the use of the œsophageal sound was limited to the causation of emesis and the extraction from the œsophagus of foreign bodies, or pushing them into the stomach.· Toward the end of the seventeenth century and the beginning of the eighteenth a new application of this instrument became known—namely, the direct treatment of the gastric mucosa; an indication which has come to the foreground in our time, although in a modified form. It is of interest to us to know that an original method of directly cleansing and treating the gastric mucosa by an improvised sound was in vogue among the natives of South America, and is reported as such by Dapper (16) in 1673. Dapper describes the stomach treatment of these aboriginal tribes in the following words: "The Tapugas, a Brazilian tribe, have a wonderful way of cleansing their belly from the inside. They stick a rope of pladded, sharp leaves down their throat until it reaches the stomach, and there they turn and twist it so long until they vomit and spit blood. Hereafter they draw the rope out and the belly is cleansed."

About the same time that Dapper published his description of the South American method of cleansing the stomach, in the second half of the seventeenth century, an instrument became known in Europe which served a similar purpose, and which, judging from the large amount of literature concerning it, created a sensation. It was variously called stomach cleaner, scratcher, or stomach brush (German, *Magenkrätzer*, *Magenräumer*, *Magenbürste*). The stomach brush was a long, smooth, and very flexible piece of whalebone, varying between two to three feet in length, the lower end forming a small button, to which a tuft or tassel of silk, cord, or linen was tied. This was pushed down into the œsophagus and the stomach scrubbed with it. Rumsæus (17), speaking of the stomach brush in those days, says: "There was no beer company at which some did not apply it themselves after drinking heavily, either the same night or on the following morning, after having snored out their intoxication through the open mouth, if they were distressed with thick phlegm in the throat." According to Sorbierus (18), a similar brush was used in France in 1694, and Pechlin (19) describes its employment by two Norwegian peasants in the presence of the King of Denmark. And Leube (*loc. cit.*), to whom we are indebted for a compilation of the literature on this subject, gives a very interesting and ridiculous account of the treatment of a Russian statesman by monks with this instrument, which in Germany was at first used only in convents and kept secret there as an "arcanum." But the "arcanum" leaked out, and stomach brushes were manufactured at Leipsic and used everywhere. J. C. Socrates (20) asserted it to be a panacea against all ailments that originated from the stomach, and as a prophylactic means even for healthy persons who desire to prolong their life. "Brushing out the stomach," he says, "with an elixir of aloes, saffron, and myrrh following it, protects the body for twenty-four hours from poison and pests; it brings a good memory, improves eyesight, etc., and improves cold and hot fevers, asthma, mammary abscess, consumption, cephalagia, apoplexy, toothache, croup, etc. It seemed," the author remarks, "as if Death had laid aside his scythe and taken a stomach brush in his hand."

The appearance of this stomach brush and its enthusiastic reception by the profession and the laity marks a most interesting epoch in the history of therapeutics. In a period when physicians were almost helpless in treating internal diseases, with an endless confusion in pharmaceutical agents of unknown and unintelligible effects, for the first time an internal organ is boldly subjected to local mechanosurgical treatment in spite of all orthodox objections. In this rude instrument was represented the germ of the perfected modern method of treating gastric diseases. Leube goes so far (*loc. cit.*) as to intimate that an improved form of the old stomach brush would be worth trying nowadays in nervous dyspepsia and atony of the gastric mucosa. The violent manner in which the brush was used, particularly by the laity, caused its disrepute and it was soon forgotten, and, in the preceding century to this, one finds only œsophageal sounds of whalebone, with sponge ends or ivory knobs at the end, used solely to give relief mechanically in diseases (paralysis) of the œsophagus. These tools were used also to dilate strictures of the œsophagus. Abercrombie (21) employed a silver œsophageal sound with an oval knob at the end for this purpose.

A further field of utility was found when physicians were endeavoring to bring food and medicines into the stomach in cases in which deglutition was impaired, or in cases in which the stomach contents had to be removed more promptly and completely than could be done by emetics. In both instances the object could be accomplished only if the sound took the form of a tube and extended into the stomach.

Fabricius ab Aquapendente (*loc. cit.*, cap. 33) appears to have made one of the first publications concerning artificial alimentation in lockjaw by means of a small silver tube introduced through the nose, also recommending the passage around the posterior molar teeth. An earlier account of artificial alimentation is that of Capivacceus (22), whose instrument consisted of a tube with an animal bladder fixed to the upper end and containing nutritious liquid, which was expressed into the œsophagus (*canula intra gulam immittenda*); the account, however, is not a clear one. When Van Helmont (1646) discovered a way of manufacturing catheters of leather (23) the œsophageal sounds were made much longer, and in the eighteenth century they were made of an elastic material and used by the illustrious John Hunter (24), who introduced such catheters into the stomach to inject irritating substances into it for resuscitation of the apparently drowned.

The English surgeon, F. Bush, was the first to attach a pump to the stomach tube to evacuate the stomach in a case of opium poisoning (4), though one of the earliest descriptions of a so-called stomach pump is by Samuel Moore, in the *New York Medical and Physical Journal*, vol. vi, No. 3.

The perfect stomach pump, as it is in rare instances used in the present time, must be claimed as an American invention, and Martius and Lüttke (26), and also Kussmaul (*loc. cit.*), give the credit of the same to Dr. Wyman, of Boston, stating at the same time that the instrument was first used for the evacuation of empyematous collections by the elder Dr. Bowditch. The stomach siphon was first proposed by Arnott (5) in 1829, and then by Sommerville in 1832 (quoted from Penzoldt, *vide* No. 27), but passed into oblivion. Kussmaul (*loc. cit.*) again directed attention to it in his publications in 1867 and 1869, and Ewald (3), although not clearly admitting his priority, gives Kussmaul great credit for having again called the attention of the whole medical profession in an impressive way to the use and benefits of the stomach tube. At the *Naturforscherversammlung* at Rostock (1871), Leube opened up an excellent means of using the tube for diagnostic purposes. In 1874 Ewald substituted a soft, flexible tube (gas hose) for the hitherto rigid and hard sound which had up to this time been used only with a whalebone guide or stylet (28). In his text-book Ewald also clears up the nomenclature of the various tubes, which had been called sounds, siphons, tubes, indiscriminately; a sound is a solid instrument—only hollow ones must be spoken of as tubes.

In thus briefly reviewing the history of the origin and development of the stomach tube, it can be seen that the primitive object of inserting an instrument into the œsophagus was to produce evacuation of the stomach; as, for instance, the emesis produced by the *pinna* at Roman feasts.

The second step was to remove foreign bodies from the œsophagus, either by extracting them through the mouth as Scultetus (14), Ryff (13), or Arculanus (12) practised it, or, if this was impossible, to push them down into the stomach, as advocated by Fabricius ab Aquapendente (7).

The third step in the progress of mechanical therapeutics of gastric diseases was the direct treatment of the gastric mucosa with the stomach brush, as described by Rumsæus (17) and others.

A distinct fourth step in this direction was brought about by the necessity of artificial alimentation in cases of impaired nutrition.

All of these operations had been up to the time of 1646 (Van Helmont) carried out with rigid instruments, the latter being the inventor of the leather catheter. John Hunter (1776) first passed hollow bougies or flexible catheters into the stomach. The practical stomach pump is claimed as an American invention, made by Dr. Wyman, of Boston. Ewald is the sponsor for the very soft, flexible lavage tube as used mostly at present, and proposed it in place of the stiff tubes in 1875.

The tube to which we now turn our attention must be looked upon as a further development in the history of the subject; it is the double or recurrent tube through which the stomach can be washed out with a continuous current. Leube calls it "*Magencatheter à double courant.*" This double tube was first devised and employed in gastric diseases by Auerbach (29) in 1870, and Ploss (30) in 1870. In speaking of this tube, Leube says: "There is no doubt about it that this tube has definite advantages making it preferable to other single tubes. It permits of a prolonged douche to be carried out on the gastric wall, renders a rapid and complete clearing out of the stomach possible, and excludes entirely the possibility of aspirating the mucosa."

Notwithstanding these advantages, the tubes of Auerbach and Ploss, on account of their great thickness, were found impracticable. They were made of rigid, almost inflexible material, and Ploss states that they are difficult to introduce on account of their large size, for if the diameter of the tube is not very considerable, the stomach contents can not find a sufficient outflow. The authors last referred to express the hope that double stomach tubes may in future perhaps be made of flexible, soft material, with thin walls, insuring considerable volume to the outflow tube without excessively annoying the throat of the patient.

In the *New York Medical Journal* for June 9, 1883, Dr. Henry O. Marcy, of Boston, published a description of double irrigation and drainage tubes, which were also described in the *Transactions of the American Medical Association* for 1881 under the same title. Both of these articles are very short, and treat mainly of the introduction of these double drainage-tubes into the bladder, uterus, rectum, and pleural cavity in empyema; only eight lines are devoted to the treatment of the stomach, stating that "an ordinary rubber syringe is all that is necessary in connection with one of these tubes for speedy emptying of the stomach." In the tubes described in both these articles the outflow and inflow portions are of equal calibre, and as the inflow, carrying water downhill with gravity favoring it, must naturally supply a great deal more water than the same diameter of outflow with gravity opposing, the inevitable consequence must be that the stomach will be overfilled to bursting. Dr. Marcy, in a private communication to the writer, has stated that he found later that the return current must be larger in order to prevent overfilling.

Evidently, if a rubber syringe is necessary in using the tubes just referred to, they were not so simple in manipulation or as practical as the double tube proposed by the writer in (31) the *New York Medical Journal* for March 30, 1895, which works by itself in simple siphonage.

In this article great stress was laid on the necessity of having the inflow only half the calibre of the outflow, "to insure at all times a greater facility to the outflow than to the inflow, otherwise the stomach may become overloaded with water, which, owing to the elevated position of the reservoir, runs into the stomach very readily and in greater quantities than could be carried away by an outflow tube of the same size as the inflow."

The recurrent tube which the writer proposed (*loc. cit.*) in March, 1895, has by experience since been found to have several objectionable features. In the first place, the central partition, which divided the tube into two channels, produced a lumen with two corners—viz., A and B in the accompanying sketch—and corners are difficult to keep aseptic, besides catching more food particles than a smooth-

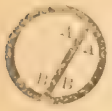

Fig. 1.

ly rounded tube would do. And, secondly, the point of outflow was too near the inflow (both at the end of the tube) to allow of proper sweep to the current, which is very essential for effective cleansing, as the stomach contents must be thoroughly stirred up, and mucus removed that at times seems tightly agglutinated to its walls. Thirdly, the tube was too bulky for most patients. These three objectons have, by much patient experimenting, been removed in the improved, very practical, and very graceful instrument which is presented in the following.

The apparatus consists of a glass jar or reservoir, E, which may be of varying capacity, as it probably in most cases of gastrectasia will have to be filled from time to time during the lavage. This is best done by having a tube running up to it from a combination faucet, by which hot and cold water can be mixed to a suitable temperature and constantly supply it above as it runs out into the tube at D. Dr. Herman Straus, assistant to Professor Riegel at Giesen, saw rice particles in the wash water after he had allowed forty litres of water to flow in and out. The writer has personally washed an ectasia without neoplams for an hour and a quarter with a simple Ewald tube, and after that found thick mucus and bread in the last washing. From this it can be seen how much water is sometimes needed, how much time is consumed, and how necessary a practical time-saving recurrent tube has become. When the treatment is in the sitting position, the glass reservoir should be about twelve inches above his head; though any convenient shelf will answer, as with increasing pressure, if the outflow is too great, it can be controlled with the stopcock D.

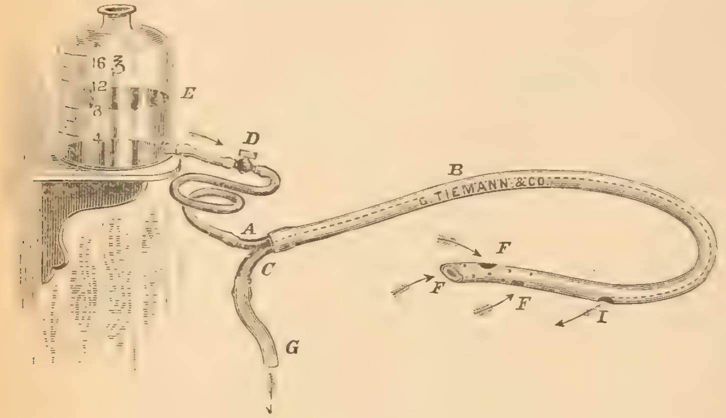

Fig. 2.

The portions A (inflow) and C (outflow) are made of hard rubber, to which the double tube proper is fastened.

From the exterior this tube B looks like any other soft, single stomach tube; a cross section, however, would show that it is constructed of one tube within the other.

From A to I, the point where the inflow discharges into the stomach, along the dotted line A I, and firmly molded against one side of the larger tube B, is a smooth tube of smaller calibre which conducts the water from the reservoir into the stomach.

The opening or outlet of the inflow tube is fourteen centimetres distant from the lower end of the tube and the outflow openings, thus compelling the current to circulate through the stomach before it can reach the outflow openings. All gastric tubes must be within the stomach to a distance of fifteen centimetres at least before they siphon properly. This was ascertained by numerous experiments on the cadaver. F, F, and F are the outflow openings at the lower (gastric) end of the tube. G is the beginning of the discharge tube to conduct away the outflow; it can be led into a bucket or sink or the like. The contour of the smaller inflow tube, which is contained within the larger outflow tube, is perfectly smooth, and presents no uneven edges or corners. The instrument, as turned out by Tiemann & Co., of New York, is provided with the velvet-eye outflow openings of this firm, and probably represents the most perfect double-current stomach tube as yet described. All its contours and lines are perfectly smooth, and in a somewhat enlarged form it can with great advantage be used as a rectal or colon tube.

In devising a double-current stomach tube a great many important physical factors enter into consideration. The quantity of water which flows through the inflow tube in a given time under a given height of the pressure bottle and the quantity of water which will flow out of the outflow tube by simple siphonage must be carefully determined. From twenty measurements of living female patients the author has found that the average distance from the incisor teeth to the deepest portion of the stomach is fifty-five centimetres, and in thirty-six measurements of healthy males the same distance was found to be sixty centimetres. In cadavers this distance is in both sexes, according to the author's experience, shortened by post-mortem rigor, it having been found to be 52·5 centimetres for females in twelve different subjects on the average. In twelve male cadavers the average distance from the incisor teeth to the deepest part of the stomach was fifty-four centimetres. In ten cases of dilatation of the stomach the average distance from the incisor teeth to the deepest portion of the stomach, as measured by as rigid a sound as could safely be introduced, was sixty-nine centimetres. In ordering the new double-current tube, however, from Tiemann & Co. the manufacturers were directed to make the portion which is introduced into the body seventy to seventy-two centimetres long, which length, on the basis of the foregoing measurements, was considered sufficient for all requirements. The amount flowing down through the inflow tube will vary with the height of the pressure bottle, but should never exceed more than one litre in two minutes; in the same tube the outflow channel should be able at the same time to discharge by simple siphonage two litres. The inflow and outflow tube should be tested as regards their calibre, the former by pressure, the latter by siphonage, before they are used on patients.

When the outflow tube is tested as regards the amount of water it will discharge in a given time the tube should be arranged as in Fig. 3, so that the water must rise seventy centimetres, the distance from the deepest portion of the

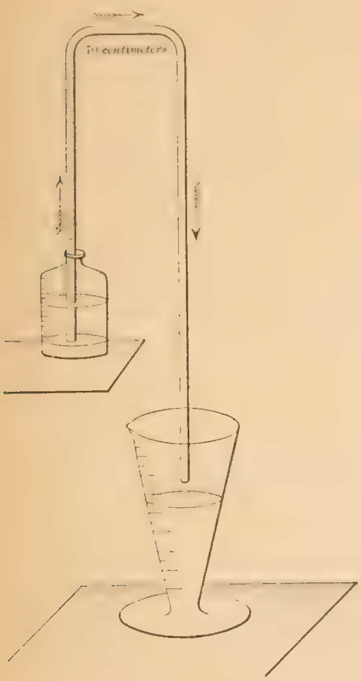

FIG. 3.

stomach to the incisor teeth, before it can descend into the measuring graduate. The procedure of lavage must be attentively watched in cases where much solid *débris* is expected, and if the outflow becomes choked with solid matter the inflow must be cut off at once until the outward passage is made clear.

A piece of glass tubing two inches long, firmly tied into the outflow tube, is useful, in that it permits the operator to observe the material which is running out.

The single stomach tube has been swallowed entirely and disappeared into the stomach. At least two such accidents are on record, one by Leube (33), the other by Jackson (35); they are both quoted by William H. Welch, in his article on Dilatation of the Stomach in Pepper's *American System of Medicine*, vol. ii.

With a double or recurrent tube this accident is impossible, as the instrument is tied to the supply reservoir. Aspiration of the mucosa and tearing of pieces of healthy membrane by suction, which has occurred in Leube's experience (2), is also a matter of impossibility with the recurrent tube. Physicians who have used gastric lavage with a simple funnel know how difficult it is to keep air from being sucked into the stomach; a deep funnel of air forms in the centre and is occasionally aspirated into the stomach; all of this is avoided in the recurrent tube. The author, on visiting Professor F. Penzoldt in Erlangen, in July, 1895, was surprised to find this pioneer of digestive pathology still advocating the use of a guide in the shape of a flexible stick or whalebone, which during introduction is inserted into the gastric tube to facilitate its entering the œsophagus after it curves over the base of the tongue.

In his most recent contribution to the subject Penzoldt (*loc. cit.*, 27) gives minute details as regards the method of application of the *Leitungsstab* or *mandrin* within the tube, and says that it should be oiled to facilitate its removal when the tube has reached the middle of the œsophagus. He also suggests catching the tip of the lavage tube between the index and middle fingers of the left hand, which are inserted into the patient's mouth, and bending the tip down over the base of the tongue until it enters the œsophagus. This is the method advocated by his teacher, Professor Leube (*loc. cit.*, 2), and also by Rosenheim (36). In the writer's experience the intratubal whalebone guide and the insertion of the fingers into the patient's mouth are superfluous. The tube can always be introduced without a guide and without touching the patient. The main point is that the point of the tube, when it has reached the wall of the pharynx, shall be deflected downward. This will occur without exception and in a very natural, easy manner if the patient is directed to swallow at this moment. In the moment of this act of deglutition the point of the tube is bent downward into the œsophagus. Beginners in using the tube need have no fear that it will enter the trachea. To make it enter the trachea is, in the writer's experience, a difficult undertaking, and requires special training and dexterity. He was present on an occasion when a class of ten students were taking a private course in diseases of the throat, during which lesson they were trying to mop the larynx. What they really did was to mop out the superior portion of the œsophagus. Direct the patient to keep taking deep inspirations, and as soon as the tip or point of the tube is felt touching the pharyngeal wall, tell him to swallow, and almost immediately the tube follows into the œsophagus and can be pushed into the stomach without further resistance. It is not necessary for the patient to open his teeth any wider than just to admit the sound; at the same time caution him not to bite on it, but keep breathing naturally. No patient should be subjected to gastric lavage without previously examining the thorax. Penzoldt tells of a case in which the stomach should have been washed out in the morning, but on account of lack of time this was postponed until the same evening. On the same afternoon the patient died of rupture of an aortic aneurysm into the œsophagus. This leads to the conclusion of this paper with a brief statement of the indications and contraindications of gastric lavage.

The recurrent stomach tube is not available in the removal of test meals from the stomach, because it needs too much water to operate satisfactorily, which would later complicate the analysis. If, however, this surplus water is no objection to the chemist, the double tube is a rapid means of obtaining gastric contents. The same indications and contraindications that hold good in applying the single tube appertain also to the double tube. They are these: the tube is contraindicated—

I. In all constitutional and local diseases in which the diseases could be aggravated or life endangered by the irritation and exertion of lavage. Among these could be mentioned:

1. Pregnancy (though this is not a disease).
2. Heart diseases in a state of defective compensation—heart neuroses, angina pectoris, myocarditis, and fatty heart in advanced stage.
3. Aneurysm of the large arteries.
4. Recent hæmorrhages of all kinds, including apoplexies, pulmonary, renal, vesical, gastric, and rectal hæmorrhage and hæmorrhagic infarctions.
5. Advanced pulmonary tuberculosis.
6. Advanced pulmonary emphysema with bronchitis.
7. Apoplexia and cerebral hyperæmia.
8. Advanced cachexia.
9. Presence of continued or remittent fever.

The stomach and intestinal diseases which Boas states are contraindications of the use of the tube are:

1. Ulcer with recent hæmatemesis and dark stools.
2. Palpable carcinoma of the pylorus, with vomiting of coffee-ground material and the classical symptoms of cancer.
3. Many gastric neuroses in which the character of the malady is clear without lavage.
4. Stomach or intestinal troubles with acute fever.
5. Gastric mucosa easily started to bleeding.
6. Secondary gastric affections whose dependence upon a distinct and more important primary disease is evident.

These are not invariable rules, however; there may occur cases under some of these exceptions at times that on account of depressing self-intoxication from the stomach or advanced gastric fermentation peremptorily require lavage. Thus, according to Boas, it has been employed with success in pregnancy, and the author has once washed out the stomach in a case of typhoid fever with favorable result, and also performed lavage in a case of aortic regurgitation with Bright's disease and gastrectasia where much relief was experienced from the procedure. Professor Moritz, of Munich, has frequently passed the stomach tube in pregnant women to ascertain the intragastric pressure (25). Although gastric pathology is emerging more and more from empiricism, and approaching an exact science based upon chemical, physiological, and pathological facts, still much depends upon the experience and judgment of the physician, and here as well as in many instances that put to the test our experience in medicine, the quotation with which Ewald closes his book (*loc. cit.*) is true.

Ubi ratio sine experimentis mendax
Ita experientia sine ratione fallax.

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MEMBRANOUS ENTERITIS:

ITS PATHOLOGICAL CHARACTER AND TREATMENT.*

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In this paper it is proposed to discuss the disease called membranous enteritis, with reference to symptoms, personal cases, pathological character, and treatment.

Membranous enteritis has been recognized as a distinct form of disease only within the past seventy-five years. According to Wales,† although evidences of its existence may be found in medical literature as far back as the second century, Powell, in 1818, first discriminated it from biliary colic. The fact that there are twenty-nine differing synonyms is an evidence of the varying shades of opinion that have existed concerning it.

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* Read before the Medical Society of the County of Kings, May 21, 1895.

† All references may be found in the bibliography appended to this article.

A careful and extended search of the literature, in connection with a study of the cases to be reported, warrants the following presentation of this disease and its peculiar characteristics :

It is most frequent between the thirtieth and fortieth years, occasionally ceasing at the forty-fifth, as in my eighth (related) case. It has been observed in children of three to twelve years of age (Barrier, Chapin, J. L. Smith, Goodhart, Edwards).

The great majority of cases occur in women. All of Wales's, ninety six of Whitehead's one hundred, and eighty per cent. of Field's were in women.

It appears to be considerably more frequent in this country than in Europe. Strümpell, Vierordt, and German writers in general, speak of it as a rare complication in some cases of chronic intestinal catarrh. The disease generally begins in a subacute manner, although five of my cases gave a history of what was called acute dysentery. Whether its onset is acute or subacute, its subsequent course is chronic. There are more or less persistent symptoms of gastro-intestinal derangement, which differ little from those of ordinary occurrence. The characteristic events are the painful paroxysmal passage of membrane, and a peculiar train of phenomena referable to the nervous system. The paroxysms may occur daily, or at intervals of a month, or at any intermediate period. In one of my cases nearly three months elapsed between successive exacerbations. The pain begins lightly, is referred to the lower abdomen, increases in severity, reaches its acme, and in many cases is relieved by the passage of membrane, after which it gradually declines. The paroxysms may last for a day or a week. The pain itself is colicky, tenesmic, and of a peculiarly sickening character, producing a facies like that which accompanies pressure on a tender ovary. There is almost invariable abdominal tenderness, sometimes great and general, as in Case I, where it simulated peritonitis. It is usually circumscribed in either iliac fossa, especially the left. This abdominal tenderness may be persistent in varying degrees during the continuance of the disease. There may be vesical and uterine tenesmus, and mucous discharges from these organs.

The membranes may be shreddy, ribbon-shaped, cord-like, or may constitute perfect cylindrical casts of the intestine, twenty to sixty centimetres long (Wales). The quantity ranges from a very small amount up to three kilogrammes in one paroxysm. It may be passed with fæcal matter or alone. By stirring and decantation with water separation is readily effected. Chemically the membrane is composed of dense transformed mucus (Osler). Albumin, if present, is but a trace. Microscopically, with low powers, the surface of the membrane shows relatively opaque ridges, outlining relatively translucent pits or depressions. These pits correspond to the follicles of the intestinal mucous membrane, upon which the dense mucus is molded (Edwards). With higher powers, cylindrical epithelium and more or less spherical cells are found (Wales, Clark). These cells have usually undergone granular or fatty degeneration, and are not perfect in shape.* Crystals of cholesterin, triple phosphates, and calcium oxalate are also found. Numerous particles of vegetable or animal tissue from the ingesta may occur.

Bacterial investigation has proved negative (Solis-Cohen, S.). Farr and Bennett profess to have found a confervoid growth as the cause of the disease, but their observations have not been confirmed.

The temperature is always normal or subnormal. The general nutrition usually, but not invariably, suffers. Emaciation, anæmia, and loss of strength may occur in varying degrees. Diarrhœa and constipation, hæmorrhoids, rectal prolapse, jaundice, polydipsia, aphthous stomatitis, and furuncular inflammations may coexist with the disease.

The nervous phenomena are peculiar and striking in the extreme. They are practically of invariable occurrence in this disease, although Edwards reports one case in which the mental distress occasioned by the patient's condition was the only symptom referable to the nervous system. Nevertheless, the great preponderance of cases in which the nervous symptoms are prominent, render the exceptions of little value. These nervous phenomena are so varied and numerous, and in my opinion have such an important bearing upon the nature and treatment of this disease, that they will be discussed in connection with its pathological character.

Case I.—M. M., a woman, aged thirty-four years; United States; married; four children. Has passed membrane for four years, at intervals of two to six weeks; began rather abruptly after gradual loss of health, with a pseudo-dysenteric attack. Has an almost constantly tender and painful spot in left iliac region. Abdominal distress begins and gradually increases, reaching its maximum when the membrane is discharged, after which it slowly diminishes. Has occasional attacks of diarrhœa, but is usually constipated, and if constipated is in pain until a movement is secured. Has frequent headaches and neuralgias. Very active mentally. Is thin, pale, and anæmic. Has been treated for uterine disease, and the cervix has been repaired. Examination shows no present disease of the uterus or annexa. On two or three occasions there has been a copious discharge of glairy mucus from the vagina, with a feeling of weight and pelvic tenesmus. Brown hair and light complexion. Under treatment and change of air there is an amelioration of symptoms and an increase of weight.

Case II.—E. M. C., a woman, aged thirty-eight years; single; United States. Always somewhat dyspeptic. Disease began with several attacks of diarrhœa. Since then, for a period of one year, has had more or less constant bilateral pain in lower abdomen, with frequent exacerbations. Is usually constipated, but with occasional looseness. Has been passing shreds of membrane almost constantly within this period. In the effort to relieve pain the dietary was reduced to a minimum, with consequent emaciation, anæmia, and loss of strength. The passing of membrane was not regarded as of sufficient importance to be mentioned by the patient until specifically inquired after. Dark complexion and hair. Emotional, and easily elated or depressed. Comes of a neurotic family. No pelvic disease. Lower abdominal tenderness not strictly localized. Under treatment for two months and a half by rest, a larger food supply, cod-liver oil, and tonics, the pain comes but seldom; bowels are regular; color and strength have returned to a marked degree.

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* A number of color-analyses (Ehrlich) were made, but without satisfactory results, the greater number of cells being simply masses of granular *débris*. Eosinophilic and neutrophilic granules were relatively numerous.

Case III.—O., a woman, aged thirty-two years; married; United States; no children. Was seen first during an acute attack, supposed to be peritonitis, of which she was reported to have had several sieges. Abdomen exquisitely tender and painful; abdominal muscles voluntarily rigid. Acme of soreness in left iliac fossa. Temperature normal. Pulse rapid and compressible. No vomiting. Moderate headache. Bowels constipated. Appetite fair. General aspect of patient extremely neurotic. Inquiry developed the fact that she had passed mucus for more than a year. She had been treated variously for pelvic disease, but without amelioration. Pelvic examination demonstrated the absence of notable uterine or ovarian disease. Small doses of morphine and a week in bed enabled her to get up and out. Movement of the bowels by enema or mild laxative secured a painless stool, but was followed by greatly increased abdominal distress, lasting from six to twelve hours. This has been the case for some months. This patient is slender, light-haired, brown-eyed. Her mental state alternates between joyousness and slight hypochondriasis; either condition is easily excited. Has frequent headaches, neuralgias, and various paræsthesiæ.

Case IV.—S. P., a woman, aged thirty-five years; married; United States; one child. General health fair. Easily tired. Occasional headache, neuralgias, and paræsthesiæ. Neurotic temperament. Light complexion. Generally constipated, but has had several attacks of diarrhœa. At intervals of one to two months the constipation becomes more marked, a tender spot develops in the left iliac fossa, and when the bowels are moved a small amount of shreddy membrane is passed, and the pain gradually subsides. In this case a discharge of glairy mucus from the vagina has occurred several times, synchronously with the passage of membrane.

Case V.—A woman, aged twenty-four years; United States; married; no children. Sent from out of town with a diagnosis of "Russian tapeworm." Had been passing almost constantly yellowish, rounded, branched fragments with stools for over a year. On examination these proved to consist of mucus. Is usually constipated, but has attacks of diarrhœa. Suffers much from headache and neuralgia. Is very low-spirited. Light hair and complexion. Considerable loss of flesh and strength. This patient was seen but once, about one year ago. Cod-liver oil, regular daily enemata, and small tri-daily doses of opium were prescribed. I have since heard that after three months of persistence in this course the membrane ceased to appear, and for eight or nine months the patient has been in good health.

Case VI.—R., a woman, aged forty-three years; married; United States; one child. Neurotic heredity. Has had poor health for the past ten years, with frequent attacks of diarrhœa, alternating with constipation. Is dyspeptic, with more or less abdominal pain and uneasiness. Has been passing membrane for several years. Has suffered from menorrhagia, functional ocular symptoms, headaches, and neuralgias. Is thin, anæmic, highly neurotic, with a tendency toward depression of spirits. Is prone to exaggerate her feelings. Eight months ago, after correction of a deviated nasal sæptum and persistent use of rest and tonics, there was great improvement. At present, under strain of social and domestic duties, there is a return of the unpleasant symptoms, probably temporary. Disease not previously recognized.

Case VII.—D. B., a woman, aged thirty-two years; United States; married; three children. Has been in poor health for six or seven years. For the past three years has been passing "worms." On examination these proved to consist of mucus. Has a defective mitral valve, and suffered from pseudo-anginal pain two years ago, following epidemic influenza. Exhibits a large variety of paræsthesiæ, both mental and physical, with neuralgias of facial and intercostal nerves. Has had the cervix repaired without amelioration of symptoms. With roborant mental and physical treatment, and occasional travel, there is marked improvement. Disease not previously recognized.

Case VIII.—M., a woman, aged seventy-two years; United States; married; fertile. This patient was seen for the first time for chronic rheumatism. While obtaining her personal history, it appeared that from about the twenty-fifth to the forty-fifth years of her life she had passed membrane, with periodical pain and distress. Light hair and complexion. Always thin, with a poor digestion and very slim appetite, but very active, mentally and physically.

In this series of cases over thirty uranalyses have been made. The majority showed a high specific gravity, with a plus amount of urea, running in one case to over 46·5 grammes. Six times there were traces of sugar by the indigo-carmine test, once with Fehling's. A trace of albumin was found once. No casts in any case. Urates and phosphates usually increased. In four examinations there were heavy phosphatic deposits. The membranes have been encountered in shreds, in branching cords of irregular thickness, and in a glairy, structureless form. They varied from a transparent clearness to opaque yellow or brown. The tubular and complete cylindrical forms have not been seen. In all cases repeated examinations, both chemical and microscopical, have been made to determine their composition. The material composing them was proved to be mucin, by its viscosity and stickiness, and by its solubility in limewater and one-per-cent. sodium carbonate solution, from which it may be precipitated by an excess of acetic acid (Halliburton, Hammarsten).

The general characteristics, family history, and temperament of these patients deserve a distinct mention. It is not a coincidence that with one exception all these patients were bright-minded, active women of unusual cultivation, upon whom there were large social and intellectual demands. On close inquiry the family history in all these cases furnishes neurotic affiliations. The sister of one and the brother of a second are markedly neurasthenic. The father of a third suffers from paralysis agitans; her sister is neurasthenic. The sister of a fourth is frequently hysterical, and has had one siege of anæmia and neurasthenia. There is a rather slender thread of insanity in the family of another. With one exception they have light hair and fair complexions.

The contemporaneous discharge of mucus from the intestines and vagina in two cases, and from the intestines and bladder in one case, should be noted. With the vaginal discharges there was pelvic tenesmus, and an actual protrusion of the pelvic floor, so that sitting was painful. Digital examination in one case showed a swollen condition of the pelvic contents, the vaginal canal being bathed in mucus, the uterus low and the cervix soft.

As this disease does not tend toward a fatal result, reported autopsies are extremely rare. Death results only from intercurrent disease. Simpson refers to two autopsies. One is Abercrombie's, in a patient dying of phthisis, who had passed membrane during life. In this case the colonic mucous membrane was covered with numerous vesicles containing clear fluid. The other is Wright's case, in which there was a thick-set, papular eruption on the mucous membrane of the colon and the lower part of the small intestine. Barrier observed some changes in the follicles of the intestine. Laboulbène says that the membrane is deposited first on the summits of the intestinal folds and thence spreads.

The most modern and trustworthy autopsy made is that reported by Edwards, occurring in the service of Osler. The small intestines showed distinct Peyer's patches without ulceration. The ascending portion of the colon presented membranous casts and flakes, closely adherent, and yellowish-white in color, also small pieces of semitranslucent membrane, and some solid, roundish cords, running into a clear, colorless jelly, which was almost structureless, was handled only with the greatest difficulty, and when placed in water became hardly visible. According to the illustration accompanying this report, the membrane lay, as one would expect, in the sulci of the intestinal mucous membrane, and not on the summits of the folds. The point of special pathological importance in this autopsy was the condition of the mucous membrane of the intestine. There was absolutely no evidence of colitis, old or recent. The mucous membrane was perfectly normal. Osler mentions a second similar case.

There are two theories with regard to its true nature: one, that it is a chronic inflammation of the mucous membrane of the colon, and that the accompanying symptoms are secondary to a local process; the other, that it is primarily of neurotic origin, and that the intestinal symptoms are secondary. I desire to maintain the theory of its nervous origin. The following facts are adduced in favor of this view. During their consideration it should be borne in mind, without going into unnecessary detail, that the pathological changes of chronic intestinal catarrh are well known, its symptomatology is familiar, its neurotic manifestations are scanty, it occurs largely in men, and is an extremely common disease.

With membranous enteritis, eighty to ninety-six per cent. of the cases occur in women, and the largest proportion between the ages of thirty and forty, the time of the greatest demands upon the nervous system. When occurring in men, the subjects are neurasthenic. Its greatest prevalence is in America, the nation of nervously tired women.

I have failed to find many references to family histories in the literature, but my own cases, without an exception, showed neurotic affiliations.

The disease may originate from and always assumes a severer form under depressing influences, mental or physical. S. Solis-Cohen's case, in a man, followed a great grief. The analogy to rheumatoid arthritis, a neuropathy, is in this respect very striking.

The symptoms referable to the nervous system are varied and numerous. Among them are hysteria and hysterical stigmata of all kinds: hysterical coma, convulsions, and aphasia; neurasthenia, vertigo, attacks of blue nails and lips, tingling and numbness of hands and feet, acute neuralgias of all parts of the body, pain in the external ear, tender scalp, tinnitus aurium, hyperæsthesia, paræsthesiæ, anæsthesia, temporary defects of vision, morbid alterations of taste, irregular muscular tremors, paresis, paralyses, chorea, catalepsy, amnesic aphasia, mental depression, poor memory, hypochondriasis, and melancholia. Many if not all of these are transient and largely functional in character, in the absence of definitely ascertained lesions. Finally, to these may be added the peculiar paroxysmal pain and tenderness.

When occurring in children, after eliminating simple intestinal catarrh, it is found that the subjects are from parents whose nervous systems are diseased, or who have suffered from convulsions, hysteria, neuralgia, rheumatism, or insanity. The children themselves have shown convulsions, passionateness, morbid timidity, chorea, or rheumatism.*

The characters of the urine, as results to cause, are frequently those of lithæmic neurasthenia.

The pulse may be normal or persistently rapid. In one case I suspected a beginning exophthalmic goître.

The associated discharges from bladder and vagina point to a cause not localized in the intestine. Uterine or ovarian disease and dysmenorrhœa frequently coexist.

The physiological nerve control of certain secretory processes is well known. As an example in point the salivary glands may be adduced. Stimulation of the facial nerve or the chorda tympani causes a flow of watery saliva from the submaxillary gland. Stimulation of the sympathetic fibres running to the same gland produces a thick saliva rich in mucin.

It is on the pathological side that some striking neuroses referable to the digestive apparatus may be found.

Under this head may be mentioned anorexia nervosa, dyspepsia nervosa, neurasthenia gastrica, gastroxynsis, merycismus, bulimia, acoria, nervous vomiting, and peristaltic unrest. In all of these recognized functional deviations there are various secretory, vaso-motor, motor, and sensory phenomena which it is not necessary to discuss in detail. Almost invariably there are also marked hysterical and neurasthenic symptoms referable to the general nervous system.

If the symptoms and course of membranous enteritis are compared with the symptoms and course of the neuroses just mentioned, the resemblances and analogies are so numerous and remarkable that I have felt justified in formulating the pathological character of the disease under discussion as follows:

Membranous enteritis, so called, is not an inflammation, either acute or chronic. It is a secretory neurosis affecting generally the mucous follicles of the colon and their regulating nerves, but sometimes involving the corresponding elements of the small intestine, bladder, uterus, and vagina. There are correlated sensory, vaso-motor, and motor disturbances. It constitutes a comparatively rare local manifestation of a general neurosis, usually hysteria or neurasthenia.

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* Edwards, W. A. *American Text-book of Diseases of Children.* Starr, editor, p. 470.

The nerves involved in the local neurosis are, for the small intestine, the superior mesenteric plexus; for the large intestine, the inferior mesenteric and inferior hypogastric plexuses; for the uterus, vagina, and bladder, the inferior hypogastric plexus. Their respective spinal nerve connections should be remembered. It will be seen that, owing to the anatomical conditions of nerve supply, the uterus and bladder may readily participate in any disturbance of innervation of the colon.

The fact that the mucous follicles of the large intestine are much more numerous than those of the small intestine, are longer, and contain ten times the number of goblet cells, will probably account for the fact that the mucous casts are found mainly in the colon. Paroxysms of pain may occur without the passage of shreds, and the discharge of shreds may continue for some days after the pain has subsided.

The factors determining the onset of the abdominal manifestations are stated variously. Among them are exposure to wet and cold, bad food, fæcal impaction, the injudicious use of cathartics, ovarian disease and dysmenorrhœa in women and prostatic disease in men, dysentery, diarrhœa, habitual constipation, abdominal cancer, pyloric obstruction, proctitis, hæmorrhoids, typhoid fever, pertussis, enteralgia, erysipelas, and tuberculosis of the intestines. This lack of uniformity demonstrates that a special determining cause can not be assigned.

The chief ætiological factor I believe to be a congenitally deficient nervous system. In my own cases the dysenteric and diarrhœal attacks which are noted in each instance were without question the initial symptoms and not the cause of the disease.

The diagnosis is of interest. I am persuaded that the existence of this disease is not infrequently overlooked. DaCosta's rule is good and practical, to suspect this disease "in every case of anomalous nervous symptoms, particularly hysterical, in which there is abdominal pain." Membrane, if found, must be discriminated from ascaris lumbricoides and the varieties of tænia, fatty discharges, undigested portions of vegetable food, arteries, ligaments, fibrous and elastic tissues of meat, sausage skins, necrosed mucous membrane, fibrinous and diphtheritic shreds, and anal fissure with hypersecretion.

The outlook for permanent recovery is not good. Nevertheless, if I may trust the results in my own cases, the prognosis, with appropriate and judicious treatment, is not so gloomy as it is usually stated to be.

The therapeutic recommendations by various writers are many. Among them are enemata of water, warm or cold, containing nitric acid, nitrate of silver, sodium or potassium hydrate, limewater, starch and laudanum, saponaria or taraxacum; applications to the mucous membrane of the rectum, through the endoscopic tube, of silver nitrate, zinc sulphate, carbolic acid, and tincture of iodine. Externally, hydrotherapy, electricity, hot fomentations, with nitrohydrochloric acid, mustard, blisters, and thermocautery. Internally, irrigation of the stomach, opium, Dover's powder, morphine, belladonna, hyoscyamus, arsenic, copaiba, cubebs, pitch and tar pills, turpentine, bismuth; nitric, hydrochloric, nitrohydrochloric, and hydrocyanic acids; various preparations of iron, silver oxide and nitrate, ammonium chloride, mild and corrosive chlorides of mercury, sulphate and oxide of zinc, nux vomica and strychnine; potassium bromide, chlorate, hydrate, and iodide; sodium bicarbonate and hydrate, infusion of gentian and senna, hydronaphthol, naphthaline, salol, creolin, salicylates, resorcin, magnesium carbonate, ipecac, asafœtida, camphor monobromide, cannabis indica, phenacetin, gold, sublimed sulphur, myrrh, podophyllin, aloes, ergot, quinine, serpentaria, Carlsbad and other mineral waters, and cod-liver oil.

The treatment of personal cases has been based upon the theory of the neurotic pathogenesis of the disease, and more attention has been paid to the general than to the local conditions. The mode of life has been minutely regulated. Daily work of whatever kind has been lessened, daily rest insisted upon, sources of worry diminished, and outdoor exercise prescribed under proper restrictions. A moderate amount of abdominal pain and soreness is not a contraindication. The bicycle has proved very beneficial in two cases. Proper clothing has been adopted when possible. The dietary in almost all cases has been too limited, in one case to the starvation point, because of the fancied dependence of the abdominal symptoms upon the ingestion of food. A much more liberal supply of properly prepared meat, eggs, milk, and fats has in each case been assimilated without increased discomfort, and with very beneficial results in color, weight, and strength.

Cream, olive oil, cod-liver oil, and proteinol have proved very useful in this connection. For the relief of the painful paroxysmal attacks opium, and especially codeine, are very serviceable. In the intervals great improvement has been obtained by the use of one thirtieth of a grain of strychnine and ten to twenty minims of dilute nitrohydrochloric acid, five to fifteen grains of ferratin, two grains of ferrum redactum, ten to fifteen grains of carbonate of iron, one tenth of a grain of zinci phosphis, wine of coca, and malt extracts. One thirtieth of a grain of corrosive sublimate and one tenth of a grain of chloride of gold and sodium have at times done good service. These may be given singly or in various combinations, twice or thrice daily. Intercurrent or coexisting digestive complications, not obviously a part of the disease, were handled in the usual manner. The constipation is sometimes relieved by the general treatment. If not, enemata, plain or containing fifteen to twenty drops of nitric acid to the quart, should be employed. There is frequently a curious and painful intolerance of enemata in this disease. In such cases the mildest laxatives should be employed, as the compound rhubarb pill, rhubarb and soda, or tablets containing cascara, hydrastinine, soda, and belladonna.

As a means of preventing peripheral irritation of the nerve filaments of the intestine by putrefactive material, I have found the occasional use of tablets containing bismuth salicylate, salol, and charcoal, or other intestinal antiseptics, alone or in combination, to be very satisfactory. In cases attended spasmodically or continuously with hypochondriacal or melancholic symptoms, I have found extract of cannabis indica, a quarter of a grain every two to four hours, of much service in producing mental ease and consequent physical improvement. At times in such cases, codeine, a quarter of a grain, or the sulphate of morphine, one twentieth to one sixteenth of a grain, three times a day, will secure results which nothing else will give. Avoidance of the opium habit may be secured by personal dispensing in tablet form. Constipation will be at first increased, but is temporary.

The morale of the patient should be improved by every possible means, although in two of my cases the "faith cure" had been employed previous to my attendance. The results of the treatment have been quite satisfactory. In one case there is at least a temporary recovery; in four, very marked amelioration in the frequency and severity of the attacks; in one, moderate improvement, and in one there is no change for the better, but it is an out-of-town case and is seen only at long intervals. The related case ceased spontaneously at about forty-five years of age.

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229 GATES AVENUE.

The New York Academy of Medicine.—A special meeting was to be held on Friday evening, the 27th inst., at eight o'clock, to consider the following resolutions presented at the meeting of December 19th:

"*Resolved*, That the New York Academy of Medicine deprecates the action of the Commissioners of Charities and Correction in abolishing the consulting board of Bellevue Hospital, and the consulting and visiting boards of the City, Harlem, Gouverneur, Fordham, and Maternity Hospitals, the Hospital for Nervous Diseases, Almshouse, Workhouse, and Incurable Hospitals, and the Randall's Island Hospital.

"*Resolved*, That the New York Academy of Medicine protests against the action of the Commissioners of Charities and Correction in placing the nominations, and practically the appointments, of the consulting and visiting staffs of these hospitals in the hands of the incorporated medical schools and the fourth division of Bellevue Hospital (to all intents and purposes a monopoly) as contrary to the best interests of these institutions and of the medical profession.

"*Resolved*, That a copy of these resolutions, signed by the president and secretary of the New York Academy of Medicine, be forwarded to his Honor the Mayor, and to the Commissioners of Charities and Correction."

The College and Clinical Record will hereafter be known under the name of *Dunglison's College and Clinical Record, a Monthly Journal of Practical Medicine.*

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by D. APPLETON & Co.
Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, DECEMBER 28, 1895.

THE ACADEMY OF MEDICINE AND THE CITY HOSPITALS.

THE subject of the recent overturn in the constitution of the professional staffs of the city hospitals of New York—that is to say, those that are under the control of the Commissioners of Public Charities and Correction, not the great hospitals, such as the New York, St. Luke's, the Roosevelt, and the Presbyterian, that are endowed or depend on private contributions for their support—this subject has been set down for discussion at a special meeting of the New York Academy of Medicine called for Friday evening, the 27th inst. Certain resolutions that were presented at the meeting of the 19th inst. are to form the text of the discussion. Those resolutions we print elsewhere in this issue.

The debate will probably be found to have been a lively one, for, natural as is the feeling of resentment held by the local profession at the commissioners' action, a feeling which we have before expressed, we understand there is something to be said in extenuation of that action. It probably will be said. It is not likely that this number of the *Journal* will reach its New York subscribers before the meeting; it is the closing number of the volume, and the unusual work incident to printing and inserting the index, much of which has to be done at the last moment, together with the occurrence of Christmas in the middle of the week, makes some hours' delay almost inevitable. We therefore can not expect to influence the opinion of any member of the academy; indeed, we do not wish to do so. What is wanted is an unbiassed discussion. There are two things, however, that we may be permitted to say. One of them is that the clause of the second resolution that parenthetically declares the fourth division of Bellevue Hospital to be "to all intents and purposes a monopoly" seems to us injudicious and unnecessarily irritating, if not, indeed, insulting (though doubtless not so intended) to the gentlemen who constitute the fourth division of the staff. The other thing we wish to say is that, unless the resolutions are passed with a close approach to unanimity, they had better not be sent to the mayor and the commissioners. In matters of this sort the medical profession needs to be unanimous to secure any measure of respect.

THE HOSPITAL SATURDAY AND SUNDAY FUND.

THE executive committee of the Hospital Saturday and Sunday Association has issued a circular calling attention to the approaching times for the annual contributions from the churches, the synagogues, the trades, the professions, and the general public in behalf of the thirty-eight institutions that constitute the associate hospitals of New York. They are the Mt. Sinai Hospital, St. Luke's Hospital, the Hospital for the Relief of the Ruptured and Crippled, the German Hospital, the Home for Incurables, St. Mary's Hospital, the Eye and Ear Infirmary, the Woman's Hospital, the Infirmary for Women and Children, the Ophthalmic Hospital, the Ophthalmic and Aural Institute, the Orthopædic Hospital, the Manhattan Eye and Ear Hospital, the New York Hospital, the Roosevelt Hospital, the French Hospital, the Skin and Cancer Hospital, the College and Hospital for Women, the Holy Comforter, the Convalescent Home, the Montefiore Home, the Manhattan Dispensary and Hospital, the Post-graduate Hospital, the Nursery and Child's Hospital, the Colored Home and Hospital, the Babies' Hospital, the Cancer Hospital, St. Mark's Hospital, the Mother's Home of the Sisters of Misericordia, the Flower Surgical Hospital, the Isabella Heimath, the Old Marion Street Maternity, St. Andrew's Infirmary, the St. John's Guild Hospital, the Lebanon Hospital, the Hahnemann Hospital, and the Mothers' and Babies' Hospital. The fund is apportioned among these institutions in accordance with the amount of free shelter and treatment afforded by them.

Our readers do not need to be told of the noble nature of the association's work; it has been carried on for years, and always to the satisfaction of the community. But our readers may, perhaps, some of them, require the hint to urge upon their wealthy friends the great claim that this association has on the resources of the generous, especially in view of the fact that last year the hospitals fell $448,894.18 short of their expenses, voluntary contributions being left out of account. The contributions will be made in the synagogues on Saturday, the 28th, and in the churches on Sunday, the 29th inst. We hope that the money raised may be sufficient to answer the purpose, albeit the association expects that the coming year will witness an unusual draught upon the resources of the hospitals.

MINOR PARAGRAPHS.

THE *P. & S. PLEXUS.*

Under this title the students of the College of Physicians and Surgeons, of Chicago, have begun the publication of a monthly journal. Enthusiasm is often aroused with abbreviations, and the formula P. & S. has shown itself potent on more than one field of contest. The "old Jeff. boys" and the "Pennsies," of Philadelphia, as well as our New York P. & S. lads, understand this power. In Chicago there seems to be the same spirit in the air. *Plexus*, notwithstanding its obvious anatomical allusion, must not be supposed to hint at anything tangled in the contents of the periodical; they are plain and to the point, indeed, very creditable to our young friends in Chicago. The December number is embellished with a handsome portrait of Dr. George F. Butler, the professor of materia medica of the college. There is also an inspiring picture of the P. & S. football team. We find so much of geniality and of sprightliness in the *Plexus's* contents as to lead us to venture the prediction that it will never either snarl or get snarled. We believe that such publications are entirely wholesome, and that they should be encouraged. There can not be too strong an *esprit de corps* among our medical students.

THE *MEDICAL NEWS.*

For a number of weeks past it has been rumored and credited that the *Medical News*, of Philadelphia, was soon to become a New York publication. An announcement to that effect has now been made in the *News* for December 21st. It has also been rumored that it was to have a new editor, but concerning this the *News* is silent. Further particulars are to be given in this week's issue of that journal, which, according to the announcement, is the last that will emanate from Philadelphia. Philadelphia has a renown of its own in medicine—that of a brilliant past, that of a present not to be underrated. If we feel any regret at the change, it is sentimental; we feel that it is hard for Philadelphia to be deprived of an organ of professional opinion so estimable as the *Medical News*, one that has always been looked upon as largely a product of that city's activity and an index of its spirit. Apart from this consideration, we heartily welcome the *News* to New York and hope that in our city its influence and prosperity will go on increasing indefinitely.

ITEMS, ETC.

The Mitchell District, Indiana, Medical Society.—The forty-eighth semi-annual meeting was to be held in Bloomington on December 26th and 27th, under the presidency of Dr. Edmund Andrews, of Chicago. The programme included the following papers: The Relation of Sexual Functions to the Eye, by Dr. F. C. Heath, of Indianapolis; Purulent Conjunctivitis, by Dr. Dudley S. Reynolds, of Louisville, Ky.; The Old *versus* the Serum Treatment of Diphtheria, by Dr. J. H. Taylor, of Indianapolis; Nine Years' Experience with Diphtheria, including One Year's Experience with Antitoxine, by Dr. H. T. Dalgleish, of Vevay, Ind.; The Neurasthenic Woman of To-day, by Dr. Mary A. Spink, of Indianapolis; Surgery in the Country, by Dr. J. T. Freeland, of Bedford, Ind.; Coughs, by Dr. E. K. Lewis, of Indianapolis; Venesection in Puerperal Eclampsia, by Dr. J. T. McShane, of Indianapolis; Puerperal Sepsis, by Dr. T. N. Rafferty, of Robinson, Ill.; When and How to Remove Tonsils, by Dr. L. C. Cline, of Indianapolis; The Radical Cure of Hernia by a New Operation, by Dr. E. Wyllys Andrews, of Chicago; Vertigo, by Dr. H. M. Lash, of Indianapolis; Primary Synchronous Amputation of Both Legs, with a Report of a Case, by Dr. John E. Harris, of Bloomington, Ind.; The Care of the Perinæum during Labor, by Dr. Louis Burkhart, of Indianapolis; Ectopic Gestation, by Dr. L. H. Dunning, of Indianapolis; The Technics of Lumbar and Inguinal Colotomy, by Dr. J. M. Mathews, of Louisville, Ky.; The Physician in the Sick-room, by Dr. Allison Maxwell, of Indianapolis; Typhoid Fever, by Dr. N. D. Cox, of Spencer, Ind.; Psychic Forces and their Power as a Therapeutic Agent in the Treatment of Disease, by Dr. W. L. Whitted, of Bloomington, Ind.; The Conservative Treatment of Chronic Pelvic Peritonitis, by Dr. H. O. Pantzer, of Indianapolis; Temperament and Heredity in Disease, by Dr. L. L. Todd, of Indianapolis; The Pathogenesis of Tuberculosis, by Dr. Theodore Potter, of Indianapolis; and The History of Medicine in Verse, by Dr. U. H. Hon, of Bloomington, Ind.

An Examination for the Marine-Hospital Service.—There will be held in Washington, D. C., on February 10, 1896, a competitive examination of candidates for appointment to the position of assistant surgeon in the United States Marine-Hospital Service. Candidates are required to be not less than twenty-one years of age, and no appointment is made of any candidate over thirty years of age. They must be graduates of a reputable medical college and furnish testimonials as to character.

Successful candidates, having made the required grade, are appointed in order of merit as vacancies arise during the succeeding year. There is at present one vacancy.

A successful candidate, when recommended for appointment, is commissioned by the President of the United States as an assistant surgeon. After four years of service and a second examination he is entitled to promotion to the grade of passed assistant surgeon, and to the rank of surgeon, according to priority, on the occurrence of vacancies in that grade.

The salary of an assistant surgeon is sixteen hundred dollars per annum, together with furnished quarters, light, and fuel; that of a passed assistant surgeon, eighteen hundred dollars per annum; and that of a surgeon, twenty-five hundred dollars per annum. In addition to these salaries, after five years' service, an additional compensation of ten per cent. of the annual salary for each five years of service is allowed medical officers above the rank of assistant surgeons, the maximum rate, however, not to exceed forty per cent.

When an officer is on duty at a station where there are no quarters furnished by the government, commutation of quarters is allowed at the rate of thirty dollars a month for an assistant surgeon, forty dollars for a passed assistant surgeon, and fifty dollars for a surgeon. The successful candidates, after receiving appointments, are usually ordered to one of the larger stations for training in their duties.

Full information may be obtained by addressing the Surgeon General of the Marine-Hospital Service, Washington, D. C.

The Rush Monument Fund.—The secretary and treasurer of the committee, Dr. George H. Rohé, of Baltimore, has received the following contributions to the fund:

Oct. 5th, from Dr. J. W. Russell	$1.00
Nov. 6th, from Newark, N. J., Practitioners' Club (through Dr. J. D. Brumley)	12.00
Dec. 5th, from Dr. J. B. Hamilton, Chicago	43.00
" 10th, from Dr. J. L. Thomson, Indianapolis	5.00
" 14th, from Dr. J. H. Kellogg, Battle Creek, Mich.	5.00
" 19th, from the Rush Medical College, Chicago	100.00
" 20th, interest	25.00
Previously reported	3,357.39
Total	$3,548.39

The New York Hospital.—A Christmas entertainment was given in the children's ward on Tuesday evening. There was a tree lighted with colored electric lamps.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 8 to December 21, 1895:*

BANISTER, WILLIAM B., Captain and Assistant Surgeon. The leave of absence granted him is extended one month.

KENDALL, WILLIAM P., Captain and Assistant Surgeon, is ordered to Fort Sam Houston, Texas, for duty, upon the expiration of his present leave of absence.

KENNEDY, JAMES M., First Lieutenant and Assistant Surgeon. The leave of absence granted him is extended two months.

KULP, JOHN S., First Lieutenant and Assistant Surgeon, upon the expiration of his present leave of absence, will be relieved from duty at Fort Spokane, Washington, and ordered to Walla Walla, Washington, for duty.

WALKER, FREEMAN V., Captain and Assistant Surgeon, is, by direction of the President, wholly retired from the service this date, December 4, 1895.

WOODRUFF, CHARLES E., Captain and Assistant Surgeon, now on leave of absence, is ordered to proceed from Washington, D. C., to Fort Snelling, Minn., and report for temporary duty, without delay.

VICKERY, RICHARD S., Major and Surgeon, is retired from active service this date, December 7, 1895.

EDIE, GUY L., Captain and Assistant Surgeon, is granted leave of absence for four months.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending December 14, 1895:*

SMITH, G. T., Passed Assistant Surgeon. Detached from the U. S. Steamer Ranger and ordered to the U. S. Steamer Adams.

JOHNSON, M. K., Assistant Surgeon. Ordered to the Naval Laboratory and Department of Instruction, New York.

Society Meetings for the Coming Week:

TUESDAY, *December 31st:* Boston Society of the Medical Sciences (private).

THURSDAY, *January 2d:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *January 3d:* Practitioners' Society of New York; Baltimore Clinical Society.

SATURDAY, *January 4th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society, New York (private); Miller's River, Mass., Medical Society.

Births, Marriages, and Deaths.

Married.

HARRIS—CADY.—In Rochester, N. Y., on Wednesday, December 4th, Dr. Irving E. Harris and Dr. Emily A. Cady.

Died.

DAVIS.—In Wellsborough, Pa., on Thursday, December 19th, Dr. Hugh L. Davis, in the forty-fifth year of his age.

SPEIR.—In Brooklyn, on Thursday, December 19th, Dr. Samuel Fleet Speir, in the fifty-seventh year of his age.

Letters to the Editor.

INTUBATION IN PARALYTIC LARYNGEAL STENOSIS.

967 LEXINGTON AVENUE, NEW YORK, *December 23, 1895.*

To the Editor of the New York Medical Journal:

SIR: In the *Journal* of December 21, on page 800, Dr. George B. Hope reports a case of double paralysis of the abductor muscles in which tracheotomy was performed for the relief of urgent dyspnœa. In order to make an opening through the larynx and get rid of the tracheal cannula, a portion of each vocal cord was subsequently removed, which proved successful for a time, but the dyspnœa returned, necessitating the reintroduction of the cannula, which is still retained. The report says: "So far as the speaker knew, this operation had never been performed before, although he had suggested it and it had received some indorsement." In the *Transactions of the Ninth International Medical Congress*, vol. iv, on page 125, will be found a detailed report of a case in which a portion of both vocal cords was removed for the relief of stenosis due to double posticus paralysis, followed by intubation, the intubation tube having been worn continuously for over ten months. The operation was performed by the writer in May, 1886, and was never suggested by any one else.

The removal of the vocal cords, or any portion of them, in this class of cases, is worse than useless unless this operation is immediately followed by intubation, because the tissue removed is soon replaced by new tissue, which in time controls, thus converting a simple valvular obstruction to inspiration into a cicatricial stricture.

To produce a permanent breathing channel through the larynx in incurable paralysis of both abductors, it is not necessary to remove any portion of the vocal cords. A simple incision through one cord, which destroys the valve, followed by the wearing of a cylindrical intubation tube until the incised cord has healed in the retracted position, is all that is required.

In the case referred to above, the ordinary oval intubation tube, which was originally designed to avoid undue pressure on the vocal cords, proved useless and a tube almost cylindrical in form had to be constructed, with the object of producing as much pressure on the cords as possible during the healing of the wound.

Before pronouncing a case of double abductor paralysis incurable it would be well to try long-continued intubation with a cylindrical tube before resorting to more radical measures, because these cases are not always incurable, even after having lasted for a considerable length of time and after having resisted all the ordinary methods of treatment.

The case already referred to was pronounced incurable by several laryngologists before tracheotomy became necessary, yet this patient wore a tracheal cannula for two years and an intubation tube for ten months, and after the removal of the latter there was distinct motion of the arytænoids on attempts at phonation.

Tubes for the treatment of such cases should be constructed of hard rubber, because, not being liable to calcareous deposits, which occur on all kinds of metallic tubes, they can be worn without change for a long time.

The ordinary intubation tube suitable for the patient's age is held in the larynx solely by contraction of the vocal cords, and when this power is lost by paralysis or otherwise it must be transferred to the cricoid cartilage by increasing the retaining swell. A small retaining swell on a cylindrical tube, of course, is equivalent to a very large one on an oval tube.

J. O'Dwyer, M. D.

CARBONIC-ACID INFLATION OF THE RECTUM IN WHOOPING-COUGH.

336 East Fifteenth Street, New York, *December 13, 1895.*

To the Editor of the New York Medical Journal:

Sir: To complement my letter to you, published in your *Journal* of November 30th, I wish to present now some well-observed cases of pertussis treated by carbonic-acid inflation, which I think give conclusive evidence of the efficacy of this method of treatment.

Mr. D., a lawyer, has a wife and four children. He occupies four rooms on a second floor. His children are: Emily, aged seven years; Helen, aged five years and nine months; Agnes, aged four years; and Philip, aged two years. The three little girls sleep in one room, which is well ventilated; the window is kept open all day long, even during cold weather.

The three little girls were taken sick with whooping-cough, while the youngest, the little boy, remained free from this disease.

Helen D., who goes to school, began to cough and to sneeze on November 11th and grew worse daily. It was not until the 17th that she remained at home from school. I was summoned to see her on November 18th. On the 17th she had had nine convulsive attacks during the day and twelve during the night from the 17th to the 18th of November. The face had the characteristic œdematous swelling. On November 18th the carbonic-acid-gas inflations of the rectum were done three times. The attacks on that day were much milder in character and only four in number; there were also only four mild coughing spells during the night from the 18th to the 19th. In this case there was no epistaxis. The coughing spells assumed a milder and milder character under the carbonic-acid treatment until November 28th, when the inflations were discontinued. During the days from November 28th to December 4th, while no gas was given, the spells became more violent and were more frequent again, until they were equal in both respects to those which had been observed shortly before the gas was applied. Gas inflations were begun again on December 5th, and were continued up to December 8th. Again a most remarkable beneficial effect was noticed, gradual amelioration of the character of the attacks and lessened frequency. From December 8th to December 9th the child coughed only twice. During the night from December 10th to December 11th there was no cough at all. During the day, December 11th, she coughed three or four times, but very slightly.

Emily D., seven years old, had slight cough and sneezing from November 18th to November 25th. She stayed at home from school on the 25th, and had the inflations made from that day until December 4th, like her sister, three times a day. The convulsive attacks were severer in this case and brought on epistaxis; the frequency, however, was less. She coughed four times during the day and six times during the night before the gas was administered. The first day on which the gas was given she coughed only once during the night, and twice during the day. There was œdema of the face also in this case. During the days on which the gas was not used the attacks reappeared with their former severity, but assumed at once a lighter character and were less frequent under renewed treatment. No more gas was administered on December 10th. There was no cough at all on December 11th.

Agnes D., four years old, began to cough simultaneously with Emily—*i. e.*, on November 18th. Treatment with carbonic acid was begun on November 25th. In this case the convulsive attacks were the severest, the most violent, the œdematous swelling of the face more marked than in the two other cases. After the application of the gas the attacks were reduced in number from twelve to six during the day and from nine to four during the night. Epistaxis ceased after the first day's treatment with gas. While the cough was less frequent, it was also less violent. This child is of a much more nervous disposition than either Emily or Helen.

Philip, the little boy, had only a light cough without any symptoms characteristic of pertussis. No treatment.

During the time of treatment the weather had been most unfavorable, so much so that the children had to remain in the house all the time; even as yet, December 13th, none of them has been outdoors.

In all these cases the appetite improved with the improvement of the symptoms of the affection.

After December 10th no more gas was applied. All the children are doing well; they cough once or twice a day, but only slightly.

I am experimenting to improve the very primitive apparatus. Now I collect the gas in a rubber bag and from this reservoir I shall inflate the rectum; thus I shall not waste gas unnecessarily, as was the case with the first contrivance.

A. Rose, M. D.

Book Notices.

An Atlas of the Fertilization and Karyokinesis of the Ovum. By Edmund P. Wilson, Ph. D., Professor of Invertebrate Zoology in Columbia College. With the Co-operation of Edward Leaming, M. D., F. R. P. S., Instructor in Photography at the College of Physicians and Surgeons, Columbia College. New York and London: Macmillan & Co., 1895. Pp. vi–32.

It is gratifying to see and read a treatise which is so thorough and at the same time so comprehensive. The text is but an explanation of the plates, but it is so concisely written and so clear that any student must understand this most complex subject after reading it. The photographs, which are superior to anything of the sort we have hitherto seen, show a knowledge of section-cutting and preparation of which the authors may well be proud. In a few pages is included in a concise form the sum of our present knowledge of the cell, with a lucid explanation of the important parts played in the process of fertilization, cleavage, and maturation by chromosomes, centrosomes, and spermatozooids. It is to be regretted that such work as this is not incorporated in some general text-book, in order that it might reach a greater number of students.

A Manual of Syphilis and the Venereal Diseases. By James Nevins Hyde, A. M., M. D., Professor of Skin and Venereal Diseases, Rush Medical College, etc., Chicago, and Frank H. Montgomery, M. D., Lecturer on Dermatology and Genito-urinary Diseases, and Chief Assistant to the Clinic for Skin and Venereal Diseases, Rush Medical College, etc. With Forty-four Illustrations in the Text and Eight Full-page Plates in Colors and Tints. Philadelphia: W. B. Saunders, 1895. Pp. 8–17 to 618. [Price, $2.50.]

The authors of this manual tell us that it is not intended as a compendium of venereal diseases, but is meant to meet the needs of students and practitioners. They have succeeded in making a very satisfactory book, if one limits his criticism by the avowed intentions of the writers.

The symptoms of syphilis and its invasion of the special organs, together with its treatment, take up about half the book. "Disorders not invariably venereal" and urethritis, both acute and chronic, with all their complications, fill the rest of the six hundred pages. The text can not be criticised, for it contains the views of the best men of this and other countries on the subject with which it deals. The style of the authors makes the work very readable. The proof-reading is good. The cuts are only fair examples of art, but in the main the printing and book-making are good.

Manual of Gynæcology. By Henry T. Byford, M. D., Professor of Gynæcology and Clinical Gynæcology in the College of Physicians and Surgeons of Chicago, etc. Containing Two Hundred and Thirty-four Illustrations, many of which are Original. Philadelphia: P. Blakiston, Son, & Co., 1895. Pp. xii–13 to 488.

Among the many books dedicated to the needs of the general practitioner and the student, these constant cares of the specialist, this book must be numbered. In its general make-up it will undoubtedly answer this purpose for those who can not afford the time to consult larger and more thorough works. The author has arranged his material in a unique manner and is modern in his methods and views on the majority of the subjects he has under discussion. His descriptions of operations are concise and his pathological observations are gathered from recent sources. The treatment of the various diseases follows recognized lines and, in general, it may be honestly said that the book contains very little that is original. It is a fairly good *résumé* of the *status præsens* of gynæcology.

Errors and misspelled words are not uncommon. Dyspareunia is spelled *dispareunia;* Dührssen and Mackenrodt are designated *Duerssen* and *Machenroth*, and J. *Whitbridge* Williams is spoken of. There are several vague sentences in the course of the book which probably a second edition will see improved.

The book has several really poor chapters, notably those on chlorosis and on ectopic gestation, but in the main, the work is readable and will not produce many false impressions on a beginner's mind.

The book-making is good. The illustrations are in part original, but mostly will appear familiar to readers of gynæcological literature. The paper is good and the book is well printed.

BOOKS, ETC., RECEIVED.

An American Text-book of Surgery. For Practitioners and Students. By Charles H. Burnett, M. D., Phineas S. Connor, M. D., Frederic S. Dennis, M. D., William W. Keen, M. D., Charles B. Nancrede, M. D., Roswell Park, M. D., Lewis S. Pilcher, M. D., Nicholas Senn, M. D., Francis J. Shepherd, M. D., Lewis A. Stimson, M. D., William Thomson, M. D., J. Collins Warren, M. D., and J. William White, M. D., Edited by William W. Keen, M. D., LL. D., and J. Willian White, M. D., Ph. D. Second Edition, carefully revised. Philadelphia: W. B. Saunders, 1895. Pp. xiv–1248. [Price, $7.]

A Manual of the Practice of Medicine. By George Roe Lockwood, M. D., Professor of Practice in the Woman's Medical College of the New York Infirmary, etc. With Seventy-two Illustrations in the Text and Twenty-two Full-page Colored Plates. Philadelphia: W. B. Saunders, 1895. Pp. 7 to 935. [Price, $2.50.]

Principles of Surgery. By N. Senn, M. D., Ph. D., LL. D,. Professor of Practice of Surgery and Clinical Surgery in Rush Medical College, Chicago, etc. Second Edition, thoroughly revised. Illustrated with One Hundred and Seventy-eight Wood Engravings and Colored Plates. Philadelphia: The F. A. Davis Company. London: F. J. Rebman, 1895. Pp. xvi–656. [Price, $4.50.]

An Atlas of Ophthalmoscopy. With an Introduction to the Use of the Ophthalmoscope. By Dr. O. Haab, Professor of Ophthalmology, University of Zurich. Translated and edited by Ernest Clarke, M. D., B. S. Lond., Fellow of the Royal College of Surgeons, etc. New York: William Wood & Company, 1895. Pp. 55.

New York County Medical Association, State of New York. Register of Members, Manual of Information. New York: Published by the Association, 1895. Pp. 176.

Deformities following Fractures of the Shafts of Bones, with Observations on the Treatment. By Thomas H. Manley, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

Various Fractures; Simple and Compound. A Clinical Report of Fifteen Cases. By Thomas H. Manley, M. D. [Reprinted from the *American Medico-surgical Bulletin.*]

Granular Lids; with Cases in Practice. By A. Britton Deynard, M. D. [Reprinted from the *Medical and Surgical Reporter.*]

The Limitation of Surgical Operations as a Means of Relief or Cure in Epilepsy. By Thomas H. Manley, M. D. [Reprinted from the *International Journal of Surgery.*]

The Localization of the Foramina at the Base of the Skull. By Edward Fawcett, M. D., C. M. Edin., Bristol.

Auscultatory Percussion and Allied Methods of Physical Diagnosis. By A. L. Benedict, M. D., Buffalo. [Reprinted from the *Medical and Surgical Reporter.*]

The Advocate of a New Method of Operation for Marked Diffuse Cartilaginous Deflection of the Nasal Sæptum. By Seymour Oppenheimer, M. D. [Reprinted from the *Annals of Ophthalmology and Otology.*]

New Inventions, etc.

A TONGUE BRUSH.

By John C. Hemmeter, M. D., Phil. D.,
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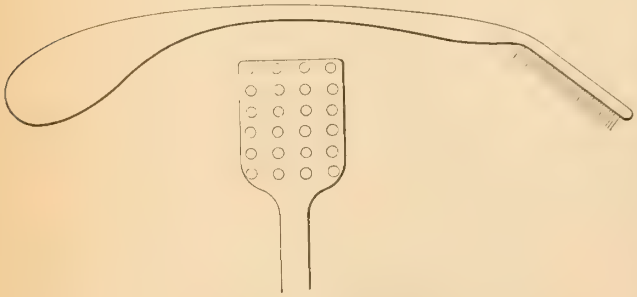
Those who have any experience in gastro-intestinal diseases, which naturally include disease of the mouth, know that it is absolutely impossible to sterilize the tongue in the manifold forms of stomatitis and glossitis by solutions. The tongue, in most subacute, acute, and chronic catarrhal states of the mouth, is covered by a layer of *débris* and bacteria which penetrates into the superficial strata of the lingual epithelium and papillæ, and can only be removed by mechanical means. It is not my intention to resuscitate the ancient stomach brush which Leube (*Die Magensonde*, Erlangen) thinks would be a good thing in atony of the gastric mucosa,* but would like to call attention to a very simple little instrument, the tongue brush, which I have devised, and which is manufactured by the brush factory of Herr Emil Kränzlein in Erlangen, according to a description given to him during a visit to the university of that city in July, 1895. The brush, however, can be made by any brushmaker who turns out toothbrushes. The tongue brush has a celluloid handle long enough to reach the base of the tongue, and gracefully curved so as to facilitate brushing the arching dorsum linguæ; the brush itself is not more than 2·4 centimetres wide, and made of short (about half the length of an ordinary toothbrush bristle), very soft bristles. This simple brush has met with great favor among my colleagues who have patients that suffer with coated tongues. Let them use it after every meal, and a simple alkaline tooth powder, the main ingredient of which is precipitated chalk, with oil of peppermint, afterward. Many persons with a fœtid breath will find relief. I trust some American brush manufacturer will undertake the making of it and bring it into the market, as it has proved a valuable means of bringing about gastric asepsis by causing clean tongues.



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Miscellany.

Solanum Carolinense in the Treatment of Epilepsy.—The *Journal of the American Medical Association* for December 14th publishes an article by Dr. C. F. Barber in which he says that he made an effort to learn something of the efficacy of this drug and of its source before using it in his practice. *Solanum carolinense*, he says, or, as it is more commonly called, horse-nettle, bull-nettle, or sand-brier, is not official. It is not recognized by the *United States Pharmacopœia*, but a description, short, it is true, is found in the *Dispensatory* of 1894. It is a native of Florida and Carolina, but is found as far north as Connecticut; it grows from one to two feet in height, branching, and is covered with shaggy hairs which are armed with stout, straight, yellowish prickles. The leaves have the same armor for defense as the stem and branches have. The berries, which are the fruit of the shrub, are used in medicine, and, when mature, are of an orange-yellow color. The shrub prefers a sandy soil for its growth and is most tenacious of life when once established.

Krauss isolated two active principles in 1894, solanin and solanidin. Only two preparations have thus far been used, the fluid extract and a twenty-per-cent. tincture.

The honor of placing this agent before the profession, says the author, is due to Dr. J. L. Napier, of Blenheim, S. C. In 1889 his paper was read before the South Carolina Medical Society, and after explaining the results of his observations among the negroes, who use the berries in whisky, making a tincture, he concisely depicted its results in his hands, which were exceedingly encouraging. Finding that those who first used the berries were in the habit of administering them in cases of convulsions, Dr. Napier secured some of the preparation used by the negroes and administered it in a case of epilepsy which had baffled the energies of all the medical men in the vicinity, and obtained surprising results. As one patient after another did well under its employment, he gradually became a convert to it as a remedy in epilepsy and allied disorders.

In March, 1893, the author obtained from Dr. A. G. Selman, of Indianapolis, a sample of the tincture. His wards at the Kings County Hospital having many epileptics among their occupants, he at once placed several upon the use of the remedy. At this time he subjected only those having the *grand-mal* type of the disease to the use of the drug. From one to six convulsive seizures was the record of these patients for twenty-four hours.

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* See article in the *New York Medical Journal* by the author, on Gastric Lavage, etc., this number.

As is the case, he says, in many instances where the drug is changed in the treatment of epilepsy, the immediate results were encouraging, for no convulsions occurred for days. For several weeks the improvement continued, some of the patients brightening mentally. The latter condition, says the author, may have been due simply to suspension of the bromide treatment. In a few instances there was slight drowsiness and in one case vertigo, but these symptoms were quickly relieved by either lessening or suspending the quantity given. In two cases, one of epileptic insanity and the other of mild epileptic seizures, there was a marked improvement. In the former case the patient had been under the author's care for six or seven years; he had been subjected to all forms of treatment, but no favorable results, even for a short time, had been noted until the drug in question was tried. The attacks occurred at night and during the day, the periods of insanity lasting from a few hours to several days. While using the drug the patient brightened mentally and the convulsive seizures were reduced from three in twenty-four hours to two a week. In the second case the patient was so much improved that her parents considered her cured. The author, however, doubts this, although, he says, the paroxysms were so mild in character that an untrained observer would consider them simply as slight nervous attacks. In no case under the author's observation have the seizures ceased entirely.

Dr. Barber's later investigations have been conducted with the fluid extract in doses of from half a drachm to half an ounce. The ages of the patients ranged from eight to fifty years, and the cases have comprised those of epilepsy with idiocy, epilepsy with insanity, epilepsy with *grand mal* and *petit mal*, and epilepsy from traumatism. Among the cases observed by Dr. Barber were those of five girls and three boys. The former, who were in the habit of having epileptic attacks each day, did well for three weeks, no convulsions occurring, but at the end of that time, says the author, he regretted that he had tried the drug, for the convulsions returned and the patients relapsed into their former condition. The dose was pushed, but no improvement was noted, and the treatment was abandoned. The boys had a mild outbreak of convulsions followed by an interval of rest for about a week, when they gradually relapsed into their former epileptic state.

Among the epileptics who were the subjects of *grand mal* he has had about the same results as with the male epileptic idiots, save that the period of improvement continued longer and the relapse was more gradual. Ten who were under the influence of the drug did not have a convulsion for twenty-nine days. Then a patient who was in the habit of having from three to six seizures a week had a mild attack, not being obliged to lie down. This patient is mentally much brighter than he has been for some time and is now capable of doing light work about the ward. He now has his epileptic attacks, but they are milder in form than previously.

These, says Dr. Barber, are examples of many cases of which he has histories, and they illustrate results obtained in his hands by the use of *Solanum carolinense*.

A few conclusions deduced by Dr. Barber from the work done with this drug are as follows:

1. That *Solanum carolinense* is not a substitute for the treatment now generally accepted for epilepsy.
2. That it is a preferable substitute for the bromide treatment when compared with the use of biborate of sodium.
3. That it unquestionably has an influence over the disease, although mild. It sufficiently controls the disease to warrant us in substituting it for a time to relieve our patients of the depression produced by the bromide treatment.
4. That its toxic effects are nil.

Tuberculous or Tubercular?—In an editorial on this subject, published in the *Lancet* for December 7th, the writer remarks that, for some years past, so far as it has been possible to control the terminology employed in the *Lancet*, that journal has been particularly mindful of the different senses attaching to the word tubercle.

Originally a purely anatomical and coarsely morphological expression, says the writer, it has come to signify a special infective disease, the ultimate cause of which is admittedly a specific microbe. The anatomical term, of course, remains, and it is etymologically accurate, but the confusion that has arisen from its transfer from this, its legitimate and general application, to denote a special kind of nodule evoked by a specific agent is rendered worse confounded when the phrase is used in the attributive sense. Although custom has hallowed and made inviolate the noun tubercle in its particular as well as in its general application, he says, there is no need for a similar commingling of terms when we employ its derivative adjective. The word tubercular is the anatomical equivalent of tubercle and has always been so employed in anatomical text-books. It has also, with a perversity that perpetuates the initial blunder, been equally applied to denote the various pathological changes induced by the presence of the *Bacillus tuberculosis*. The readers of the *Lancet* will perceive, the writer goes on to say, that the distinguished surgeon who has just delivered the Bradshaw Lecture has adopted this same phraseology. In this respect he is by no means singular, for the like use of the term is made by many other writers and teachers of medicine and surgery. On the other hand, not a few—and among them may be reckoned the *Lancet*—have attempted to dispense with tubercular as indicative of the specific infection, preferring to it the term tuberculous, which, it may be remarked, is also commonly employed in the pathological writings of the French and German authors. The writer thinks this latter practice should be universally adopted, not, he says, from any sense of pedantry, but as a matter of lucidity and accuracy in description. Scientific nomenclature is certainly, he adds, not free from etymological blemishes, but, at least, when there is a choice of terms let us be consistent in the way in which we apply them.

Individual Predisposition to Diphtheria.—The December number of the *Revue mensuelle des maladies de l'enfance* contains an abstract of an article on this subject by Dr. Wassermann, which was published in the *Zeitschrift für Hygiene und Infectionskrankheiten* for 1895. The author bases his remarks on the statistics recently published by Feer and by Flügge, and shows that the prevalence of diphtheria is comparatively small, even in children, and that the frequency and gravity of the disease diminish with the advancing age of the person. These facts, he says, lead us to think that a large number of persons are exposed during infancy to contact with the diphtheritic bacillus without contracting the disease.

In order to make an experimental study of this point, the author examined the blood of seventeen children and thirty-four adults who had never had angina. He took five or six cubic centimetres of the blood and mixed it with a certain quantity of diphtheritic toxines, and injected this mixture into guinea-pigs. The results showed that out of seventeen children from eighteen months to eleven years of age, eleven possessed a very active antitoxic serum; two, a serum which was slightly active; and four, a serum which was deprived of all antitoxic properties. Out of the thirty-four adults, twenty-eight had a very active antitoxic serum. It seemed that the frequence and intensity of this antitoxic serum increased with age.

There is the temptation, then, says the writer, to attribute the immunity of certain persons to diphtheria to the antitoxic power of their serum, an hypothesis which is based on certain clinical and experimental facts, such as the presence of virulent diphtheritic bacilli in the throats of convalescents, the presence of antitoxines in the serum of these convalescents, the resistance to diphtheritic poisoning, the presence of antitoxines in the serum of animals, the presence of virulent diphtheritic bacilli in the throats of healthy persons, etc. But, on the other hand, it is impossible to affirm that persons possessing an antitoxic serum will be absolutely proof against diphtheria, for the degree of antitoxicity of the serum is very variable, and we do not know the quantity of toxines that it can neutralize in order to prevent the occurrence of diphtheria; it is known, also, that prophylactic injections of antitoxic serum are not successful in all cases. All that can be said in the present condition of things is that the antitoxic power of the serum is one of the principal factors in the mechanism of individual immunity to diphtheria. Where, asks the writer, does this antitoxic property of the serum come from? As the blood of animals which are naturally proof against diphtheria, such as rats, does not possess this antitoxic power, the author concludes that it is acquired, and that it may be only the result of the activity of the diphtheritic bacillus. A bacteriological examination of the secretions of the throat and nose of those whose serum possesses an antitoxic power has shown the presence of the false diphtheritic bacillus. The author then concludes that the question of the origin of this acquired antitoxic function remains undecided, as it may be due to the action of the diphtheritic bacillus or to the intervention of an organic process as yet unknown.

Another question studied by the author was that of whether the existence of diphtheritic bacilli in persons having an antitoxic serum could make them a medium for the spread of the disease. In twenty children, brothers and sisters of diphtheria patients who were under the author's observation, he found virulent bacilli in three, only one of whom contracted the disease. From this Dr. Wassermann concludes that the disinfection of a diphtheritic patient's apartment should not be attempted until after we have ascertained the absence of diphtheritic bacilli, not only in the patient himself, but in the members of his family.

A Preparation of Milk for Diabetic Patients.—In the *British Medical Journal* for December 7th Dr. Sydney Ringer writes that the extremely meagre and distasteful diet of diabetic patients induces him to draw attention to a preparation of milk which he hopes may be found useful and not distasteful.

In the *Journal of Physiology*, vol. xi, p. 473, and vol. xii, p. 164, in recording experiments with caseinogen and casein, he says, he drew attention to a method of preparing caseinogen from milk, which is freed from all sugar (and salts). The following is the method: Add to a pint and a half of milk about ninety cubic centimetres of a ten-per-cent. solution of acetic acid. This precipitates a curd caseinogen. It should be allowed to settle, and the clear fluid siphoned off and distilled water added. After settling, this should be decanted or siphoned off, and the curd should be filtered and well washed with distilled water. If it is then rubbed up in a mortar with some calcium carbonate, and water is added, all the caseinogen becomes dissolved; the calcium carbonate soon settles and the milky fluid can be decanted off. The dissolved caseinogen behaves just like milk. If rennet a calcium salt are added, and the mixture is heated to 104° F., it quickly clots, and the caseinogen becomes changed into casein, which precipitates by combining with the calcium salts.

Mr. Martindale, says the author, with the aid of his able laboratory assistant, Mr. Lee, has lately made some of this solution of caseinogen, or, in other words, milk without the sugar of milk. They find that the caseinogen settles better after the addition of the acetic acid if the milk is diluted with an equal quantity of water, and they filter and wash the precipitated caseinogen on a calico filter, which allows the washing to be made quicker than in his experiments where he used filtering paper. On the addition of about two per cent. of glycerin to the mixture of caseinogen a not unpalatable form of milk is produced.

Tea Cigarettes.—The *Lyon médical* for December 1st says that fashionable English ladies are no longer content to drink tea, but that they smoke it at their five o'clock teas. A lady who is very well known always has tea cigarettes passed around after dinner. Another spends nearly two pounds sterling a week in order to gratify her taste for tea cigarettes, and three celebrated actresses have given tea-smoking parties several times. In Kensington a number of literary ladies have organized a club for this same purpose. The habit has spread so elsewhere that tobacco merchants are offering packages of tea cigarettes to the public.

A New Form of Reaction of Degeneration.—The *Revue internationale de médecine et de chirurgie pratiques* for November 25th contains an abstract of a paper which was read by Dr. Ghilarducci at the recent congress of the Italian Society of Internal Medicine. The study of electric reaction in twenty-two cases of atrophic paralysis, says the writer, enabled Dr. Ghilarducci to formulate the following conclusions: We may affirm the existence of a new form of reaction of degeneration—namely, reaction at a distance. This reaction is characterized by contractions which manifest themselves in the degenerated muscles when the circuit is shut off, and in applying the electrodes at a distance from the muscle, and in such a position that the muscle will be included in the intervening space. This form coexists constantly with the classical reaction of degeneration. The reaction at a distance depends very probably on a slackening of the electric wave, which is due apparently to the conditions under which the experiment is made. The reaction at a distance persists for months and years when the electric excitability elicited by the classical method has completely disappeared in the nervous trunk and in the muscles.

Observations on Infant Feeding.—Sir William O. Priestley, M. D., contributes to the *British Medical Journal* for December 7th an article on this subject in which he remarks that the well-being of infants is so important, not only in a domestic sense, but in its relation to the State, that it may well engage the best faculties of medical men, and not be left to the bungling mismanagement of ignorant nurses. The prevailing fallacy among these women, he says, is that an infant's food can not be nutritious unless it is thick, and they feed infants soon after birth with various mixtures of farinaceous stuffs which the young stomach can not assimilate.

The researches of M. Budin and M. Chavane, says the author, have shown conclusively that one of the chief difficulties in artificial feeding is that of keeping the milk of the cow or of other animals free from contagion, as it is found to be an admirable medium for the cultivation of microbes. M. Budin and M. Chavane, therefore, state that they can not too strongly emphasize the fact that, of all ways of feeding a newborn infant, that of nursing by the mother or by a healthy wet-nurse is the safest and the best. Their researches also clearly indicate that, next to the mother's milk, the milk of some animal properly sterilized and undiluted with water is absolutely the best.

Since it was discovered, says the author, that various zymotic diseases have been produced by infected milk, various sanitary authorities have impressed upon us the necessity of always boiling milk for household purposes, which, he says, is no doubt a very effective method of sterilizing milk. But boiling milk has, unfortunately, the effect of giving it a disagreeable taste, and it seems, besides, to have the effect of so firmly coagulating the casein as to render it indigestible for the infantile stomach. In sterilizing the milk, however, the curd is separated into minute particles or flocculi and so softened that it does not form hard concretions in the digestive tube of the infant. It is much better adapted, therefore, for infant feeding, and is likely also to be of great use in the case of adults who have feeble digestion or for other reasons find ordinary milk objectionable. M. Budin deprecates very much diluting milk with water or even barley water for infant feeding. He holds that it is much wiser and more in the interests of the child to give a smaller quantity of pure milk properly sterilized than a larger quantity diluted with water. In all the observations made in reference to this point he found that the greater quantity of fluid, required because of dilution, tended to derange digestion, while the normal and progressive increase of weight was not maintained. Always supposing that too large a quantity of sterilized milk was not given, and it was regulated in accordance with the age or needs of the child, there was no difficulty in the assimilation of the pure milk.

M. Budin, says the author, insists that both in hospital and in private practice the progressive well-being of the infant is best ascertained by weighing it. In his hospital the children are weighed every day, and their weight is registered, so that an increase or a diminution is readily observed. He has constructed an ingenious table which serves as a register. In the first column are figures in grammes, the lowest ones at the bottom, with an ascending scale. The days and weeks are indicated along the top, and thus a curve may be traced with pen or pencil, as in temperature charts. Even under normal circumstances the weight of the child drops a little during the first week after birth, but after that time it ought steadily to advance. In the charts alluded to, whenever water was added to the milk there was always a little drop in the curve, showing that less nourishment had been absorbed, and a like drop was noticed if, perchance, the child had diarrhœa or catarrh or other infantile ailment, showing that nutrition was impaired. To make the sterilization of milk effective, great care must be taken to exclude every source of infection from germs which may get access to the milk after the process is completed, either in the vessels themselves or in the apparatus used for feeding. Many of the misadventures were found to arise from lack of precaution in this respect. Sometimes the milk, after being duly sterilized, was again exposed for some time to the air before being used, and thus became again the medium for the development of bacteria, more especially in a warm atmosphere. The *Académie de médecine* in Paris does not think it beneath its dignity to express an opinion on babies' feeding bottles, because it concerns a matter of vast importance to the community, and it has emphatically condemned all feeding bottles with long and complicated tubes, because it is impossible to keep them clean and sterilized. Consequently they become the nidus for bacterial development, particularly at the joints. The simplest bottle, which can be scalded throughout, is the best, but there may be great difficulty in persuading poor women to adopt them, because, although a siphon bottle may be the means of poisoning her baby, yet she can put it beside the child in its cot and go about her other occupations, leaving it to absorb its nourishment automatically.

If pathogenic organisms can be prevented from getting access to the digestive organs of young children, says the author, one of the most fertile sources of infantile diarrhœa will be removed and the mortality from this cause greatly lessened.

Sterilized milk seems in certain cases actually to be a remedy for infantile diarrhœa, for, always supposing that a fresh supply of irritating organisms is not poured continuously into the digestive canal, Nature will eliminate the poison up to a certain amount, and then untainted milk is retained and becomes nutritious.

If M. Budin's deductions turn out to be correct—and he is a careful and earnest observer, says Priestley—the use of condensed milks may to a large extent be discarded; these have crept largely into use, and no doubt are very convenient in emergencies. They may seem to answer for a time, but in the author's experience they are very defective sources of nourishment, and should never be employed when fresh milk can be procured. Dr. Barlow, he says, who has written so ably on infantile scurvy, believes that by the condensing process milk loses its antiscorbutic property, and so favors scurvy in children. This may possibly occur when milk is boiled, but the risk is minimized when it is simply sterilized and not boiled.

The Poisonous Plants of the Vicinity of New York.—This was the subject of a lecture recently delivered by Professor Henry H. Rusby before the Alumni Association of the College of Pharmacy of the City of New York, a report of which, in pamphlet form, has reached us.

Poisonous roots, says Dr. Rusby, are likely to be eaten with other vegetables through accidental admixture, although this contingency is extremely improbable, and, moreover, the poisonous properties are in such cases often destroyed by cooking. More commonly they are mistaken for other edible roots, such as poke root for horseradish, or in Europe, it is said, aconite for horseradish. Even more frequently it is the result of the ignorant and promiscuous eating of roots in field or forest, usually by children, who are impelled either by absolute hunger or by the peculiar erratic appetite of childhood.

Poisonous articles of this class growing in our vicinity are enumerated as follows: Aconite, Cimicifuga, Actæa, Podophyllum, *Sanguinaria*, *Phytolacca*, *Robinia*, *Cicuta*, *Sambucus*, *Triosteum*, *Ipomœa*, *Solanum tuberosum*, *Apocynum*, *Euphorbia*, *Arisæma*, *Veratrum*, *Trillium*, *Leptandra*, *Iris*, *Convallaria*, and *Roripa armoracia*. Of these quite a number may be dismissed with the remark that, while their properties indicate the possibility of their occasioning poisonous symptoms, such a possibility, except by overdosing or otherwise, is very remote and is not supported by any recorded cases. In other cases the great acridity or otherwise unpleasant taste of many of them is a sufficient bar to their being eaten in ordinary cases. An important fact to be also noted in this connection is that most poisonous roots are far more active in a fresh condition, so that even those which have never been known to show dangerously poisonous powers in medicinal forms may do so if eaten in a perfectly fresh state. This class of articles then, says the author, which we may regard as poisonous in minor degree or suspicious, comprises the following: *Cimicifuga*, *Actæa*, *Triosteum*, *Leptandra*, *Ipomœa pandurata*, *Apocynum*, *Euphorbia*, *Arisæma*, *Trillium*, and *Roripa armoracia*.

Cimicifuga racemosa is abundant on the mountains along the Hudson and about Paterson and Orange. In large doses, and particularly in a fresh condition, it is actively emetico-cathartic. The Actæas or baneberries have rhizomes of a strikingly similar appearance, and have properties almost identical. There are two species, both rather common in rich, damp woodlands, especially along streams and in the borders of swamps. *A. alba*, or white baneberry, usually produces white, but occasionally red berries, while *A. rubra* commonly produces red, but occasionally white ones. The history of the properties of these rhizomes shows that when eaten fresh they might cause poisoning, though we have no definite record of such cases.

The rhizome of *Leptandra virginica*, or *Veronica virginica*, is somewhat more active, the effects being otherwise almost identical with those last mentioned. Johnson, in his *Medical Botany of North America*, says that it is too violently emetico-cathartic to be used with safety, even in medicinal doses, in the fresh condition, although it is commonly so used by the eclectics. We may hence regard this as especially suspicious. The plant has a tall habit, similar to that of *Cimicifuga*, but in every way more slender, the leaves in whorls and with the beautiful spikes of flowers sharp pointed. Its rhizome is much more slender, elongated, and branching than that of *Cimicifuga*, and the branches are articulated in a peculiar manner.

Triosteum perfoliatum grows in the same general region.

Of *Trillium erectum*, or birth-root, commonly pronounced beth-root, Lindley says the rhizome is violently emetic, and the fruit is to be regarded with suspicion. This plant is now extremely rare in the immediate vicinity of the city, but produces one of the commonest spring flowers of our northern regions. Its rhizome, though occurring in pharmacy, is not very well known. It is small, ovoid, short, and chunky.

Apocynum, bearing the expressive common name of dogbane, is represented by two species, *A. androsæmifolium* and *A. cannabinum*, the latter being the more active as well as much the more common. It grows very commonly in waste places, along roadsides and railroads, and is characterized by a strong root, the upper portion of which is erect. The other grows in more grassy places, the plants tending only slightly to become clustered; it sends out several very long horizontal rhizomes near the surface. It contains several alkaloids, and is a well-known and largely used laxative and alterative. In larger doses it is a hydragogue and diuretic, and in still larger doses powerfully emetico-cathartic with distinctly poisonous effects, though no definite case of poisoning by it has been found recorded.

Ipomœa pandurata, or man-in-the-ground, is found occasionally in northern New Jersey and upon Long Island, although it is not likely to be encountered in the vicinity of the city. The nearest point where the author has collected it is in the neighborhood of Blairstown, New Jersey. It is a prostrate vine of the morning-glory class, and produces an immense tuberous root, weighing many pounds. It contains a purgative resin, its properties being similar to those of jalap, though many times weaker, and it is certainly to be avoided as suspicious.

Euphorbia is an abundantly represented genus in this section, one species, *E. ipecacuanha*, bearing a large, fleshy root, running down deep, often for several feet, in the sandy soil along our coast. It is noted for being probably the most variable species as to the form of its leaves of our local flora. Like its relatives, it produces an abundant milky juice. Its specific name well indicates its ipecaclike properties. It was at one time very largely used instead of ipecac. No distinct case of poisoning by it is recorded.

The roots of various species of *Asclepias* may be referred to in similar terms. *Arisæma triphyllum*, Indian turnip, wild turnip, or Jack-in-the-pulpit, is well known to every one who visits our rich woods in spring and early summer. Probably everybody is also aware of the intensely acrid taste of its corm in the fresh state. Owing to this taste there is scarcely a possibility of its being eaten, but if eaten in sufficient quantity it would doubtless produce severe inflammation. Its acrid properties are lost upon drying, heating, or keeping.

Roripa armoracia, the common horseradish, likewise loses its irritating properties when heated or dried. These are almost identical with those of mustard, and, while it would not generally be regarded as a poisonous article, yet used in excess it may become so through its powerful irritation of the urinary organs, by which it is excreted. Johnson gives a case in which this result was extreme and serious. It may therefore be borne in mind, says the author, that it should not be consumed in inordinate quantity. This result, should it occur, would be found excruciatingly painful.

With reference to *Ailantus glandulosus*, so far as this tree has been examined, it has been found to be poisonous only through its volatile oil, and this only by inhalation. Taken internally, it has produced none of these effects except in one case, where the condition was chronic. The symptoms of poisoning by inhalation of the volatile oil are said to be vertigo, vomiting, and a peculiar shiver.

The effects of *Sanguinaria canadensis*, blood-root, are distinctly poisonous, and Johnson definitely records that fatal results follow overdoses. Yet the rhizome is not at all likely to be eaten, on account of its peculiar blood-red color, which is forbiddingly suspicious, and more especially because of an exceedingly acrid taste which would render the chewing and swallowing of a poisonous quantity an act of heroism. It is exceedingly common throughout the northeastern United States, and in a number of localities within a few miles of the city.

A similar position is occupied by *Podophyllum peltatum*, mandrake or May-apple, as regards its rhizome. Its taste, especially when fresh, is very repugnant, and yet if eaten in quantities it would unquestionably prove fatal. The plant is not only very common, but extremely abundant east of the Mississippi, and is likely to be encountered almost anywhere. The only locality known in the immediate vicinity of New York is at Franklin, Essex County, New Jersey.

Another rhizome whose acrid taste is likely to prevent its ingestion in poisonous quantity is that of the common *Iris versicolor*. Still, because this is commonly known as the blue flag, there is some danger that it might be eaten in mistake for *Calamus*, which is commonly known as sweet flag. It would prove seriously if not fatally poisonous, as its well-known emetico-cathartic properties, even when toned by drying and keeping, are powerful, and in a fresh state would be decidedly violent.

Some very contradictory evidence is recorded concerning the poisonous properties of the comman potato, *Solanum tuberosum*, and applies to all parts, the tuber, herb, and fruit. Direct evidence appears in literature that small, young potatoes, as well as those which have been exposed to the light while growing, so as to take on a green color, are poisonous, although the poisonous principle in both is destroyed by thorough cooking.

The roots and rootlike bodies which are not only known to be fatally poisonous, but are for various reasons likely to be eaten, are *Aconitum*, *Phytolacca*, *Convallaria*, *Veratrum*, *Robinia*, *Cicuta*, and *Sambucus*.

Aconitum napellus is referred to, not only because it is a common garden flower, and extremely poisonous, hence very likely to occasion accidents, but because we have a species, *A. noveboracense*, growing along the Beaverkill in the Catskills in a wild state. While its poisonous properties have not been investigated, evidence has been furnished which shows that it is probably, even externally, an irritant poison.

The common poke root, *Phytolacca decandra*, is one of our most violently poisonous plants. Its poisonous and medicinal properties decrease continuously with drying and keeping, so that the chief danger resides in the fresh roots. Every one is familiar with the appearance of the growing plant, extremely common everywhere about the city, along roadsides and in waste places, and one of the handsomest of all our native plants. However, it is not when it is full grown that it is likely to occasion accidents. These usually occur in early spring, before the stems make their appearance, when the roots are dug, grated, and eaten raw in mistake for horseradish, which they somewhat resemble. There is no excuse for mistaking this root if one has ever examined it, as the peculiar concentric arrangement of its tissues renders identification easy.

Convallaria maialis, or lily-of-the-valley, so commonly cultivated in gardens, is powerfully poisonous, and its fleshy rhizomes possess a dangerously attractive, sweetish taste.

Veratrum viride, Indian poke or green hellebore, has occasioned numerous poisoning accidents when given in overdoses for medicinal purposes.

The poisonous properties of the common locust tree, *Robinia pseudacacia*, and probably of other species of the genus also, are in a thick, succulent root-bark, which has been made an article of consumption by boys, with serious results, very similar to those of belladonna poisoning.

We come now, says Dr. Rusby, to consider by far the most poisonous member of this class, the *Cicuta maculata*, a root which has not only destroyed more lives than all the others combined, but which doubtless averages at least one victim a year in some part of the extensive area over which it grows in this country. It has, moreover, relatives abroad, especially the *C. virosa*, equally pernicious. These species together furnish a page in the history of vegetable toxicology which is exceeded in point of importance by very few plants. It grows throughout the entire United States, with *C. virosa* extending northward and *C. californica* upon the western coast. It occurs in swamps and other wet places, but very rarely upon high ground. During the early summer the salt marshes in the vicinity of New York, the swamps along the Hudson and upon Long Island and Staten Island, and all similar locations are whitened with it. It is commonly known as water parsnip or water hemlock, and is also known as spotted cowbane, musquash root, and beaver poison. The important part of the plant is the root, which is fascicled, fleshy-thickened, and fusiform. It looks like a miniature fascicle of dahlia roots and slightly like those of the *Helianthus tuberosus*, or Jerusalem artichoke. The individual roots are generally only an inch or an inch and a half in length and about half an inch in diameter, though they are sometimes of double this size.

The active constituent of *Cicuta* has now been determined as coniine, the well-known active constituent of *conium*.

Serious confusion, says the author, has resulted from the similar common names of several so-called parsnips. Thus, the term water parsnip has been applied to *Heracleum lanatum*, or cow parsnip, which has thus become credited with powerfully poisonous properties, whereas, in fact, it appears to be an excellent aromatic stimulant, but not at all poisonous. The common wild parsnip, *Pastinaca sativa*, has come to be regarded in the same light, but it is probably not at all poisonous, unless it may be through its local irritant properties.

Another poisonous root, says the author, the dangerous properties of which have remained unrecognized, or, to say the least, very obscure, up to the present time, is the common black elder, or *Sambucus canadensis*, a plant very common throughout the entire eastern and central United States, and represented by other species, apparently with similar properties, upon the Pacific coast and in the Old World. Dr. Christison, of Edinburgh, observed that both the berries and the flowers were known to kill fowls which fed upon them, and that when the berries were freely eaten they often caused giddiness. Of our own species, *S. canadensis*, Dr. Johnson states that the bark and the root are actively cathartic and hydragogue when freely used. There is little doubt, says the author, that he refers in this instance to the bark and the root in the dried condition, and it is well known that the properties become much less active upon drying and keeping.

Our most direct evidence bearing upon the poisonous character of the elderberry root, says Dr. Rusby, rests upon a case which occurred in the spring of 1894, at the Institution of Mercy, a Roman Catholic institution for children at Tarrytown, on the Hudson, which attracted a great deal of attention at the time in the public press. The active constituent of the elder is not known, further than that a report has recently appeared that an Italian chemist has isolated coniine from the twigs and leaves of the related European species, *S. nigra*. This would, of course, explain the similarity of the symptoms to those of *Cicuta* poisoning. The chemistry of the plant is now receiving a thorough investigation in the division of pharmacology in the United States Department of Agriculture.

Of known poisonous barks of this vicinity, says Dr. Rusby, our list is a small one. The same suspicions already recorded may be applied to the bark of *Ailantus*. As the leaves of *Kalmia*, *Pieris*, and *Ledum palustre* and the seeds of a horse-chestnut are poisonous, the barks of the same must be regarded with suspicion. *Prunus serotina* and *P. virginiana* are well known as yielding medicinal barks. Although these barks may be taken in large quantity, there is doubtless a limit beyond which they would not be safe, and we must place them among those which must be used with caution. Both the leaves and seeds of *Taxus* are known to be poisonous, and its bark also should be regarded with suspicion.

Although the root of *Sambucus* is the poisonous part, it is to be borne in mind that it is the bark portion of the root which is active. The bark of the stem acts similarly, though in a less degree, so it is to be classed as a positively poisonous bark.

Another is the *Robinia pseudacacia*, or common locust. Of this Dr. Johnson records that the roots cause symptoms of poisoning like those of belladonna poisoning, and that the bark and leaves are emetic. Professor F. W. Power has experimented upon himself with the stem bark of this tree, proving the very serious effects which it produces, and he has examined its composition with the result of showing that the poisonous constituent is an albuminous substance, thus confirming the general character of that family, the *Leguminosæ.*

This tree is so well known as a timber tree of the eastern United States that no description of it appears necessary. It is not, however, to be mistaken for the honey locust, or *Gleditschia*, or for the Kentucky coffee tree, or *Gymnocladus.* We have, however, another species, though somewhat less common, the *R. viscosa*, which doubtless possesses similar properties.

The poisonous character ascribed to roots, or barks, or both apply to the leaves also, though not always in equal degree, as in the case of aconite, locust, *Cicuta*, *Sambucus*, *Veratrum*, lily-of-the-valley, and wild cherry.

Of *Cicuta* it is remarked that we possess a second species, to be regarded with great suspicion, *C. bulbifera*, so called because of its bearing little bulblets in the leaf axils.

Of wild-cherry leaves, under which term the author includes also choke-cherry leaves, a most curious and important fact is to be recorded. It is known to all farmers that cattle and horses may browse upon the herbage of wild cherry among other shrubs without injurious results, if the plants are still growing and the leaves fresh and crisp; but numerous fatal results have been observed from eating the same leaves after the tree has been felled or the branches broken off and the leaves allowed to wilt. It has been suggested that this may result from obstruction by the mass of tough, wilted herbage; but the poisonous symptoms are not the slow ones of mechanical obstruction, but the swift ones of prussic-acid poisoning.

The poisonous effects of the herbage of *Veratrum* are well illustrated by the following: A family in New England had heard of *Caltha palustris* as furnishing a wholesome green in early spring, and, not knowing the plant, had taken a description of it and gone into a swamp where it was supposed to grow, to collect it. All partook freely of the article, which subsequently proved to be *Veratrum*, and all were violently poisoned, though none of them died. Fortunately, poisoning by this well-known plant is rarely fatal, though the suffering is severe and continues for some days. Safety is afforded because of the slow absorption of the poison and the free emesis, which generally comes on early. Indeed, persistent and uncontrollable vomiting is the chief symptom and is accompanied by depression of all the vital powers, cerebral anæmia being the prime result.

Linaria vulgaris is known to be fatal to various insects, and the volatile principle which escapes from it while wilting in the sun is capable of causing emesis in some persons who merely inhale the tainted atmosphere. It also possesses poisonous relatives.

Many violets are noted for their ipecaclike properties, yielding a glucoside called violin and long confounded with the emetine yielded by ipecac. They may be classed among the emetico-cathartics, and a large quantity might easily be productive of serious results to a child.

The same may be said of *Menyanthes*, or bog-bean.

While the plant of *Chenopodium ambrosioides* has not been known to produce fatal poisoning, yet such cases have to be recorded as resulting from the oil which is yielded by the seeds. The plant therefore must be held under suspicion.

Solanum nigrum, one of the most, if not the most, widely distributed of plants, as well as one of the most variable, is not common hereabout, but may be found occasionally in rich ground in waste places. Lindley states that a grain or two of the dried leaf will excite a rather dangerous "agitation" in the viscera, and at least one case of irritant narcotic poisoning is recorded. Notwithstanding these facts, however, the leaves are said to be consumed on a large scale in certain parts of Europe, thorough cooking appearing to destroy the poisonous properties. However, Dr. Rusby would repeat this statement with a caution, as it appears at least possible that there is here a confusion between different plants.

Concerning *Pieris Mariana*, we have only country legends to guide us. It is also known as lamb-kill, but more commonly as stagger-bush, which suggests the narcotic nature of the poisoning which it is said to occasion. Its activity is doubtless due to the presence in it of andromedatoxine.

Ledum grœnlandicum is freely used as a beverage in place of tea, and known as Labrador tea, while *L. palustre* is strongly poisonous by reason of the andromedatoxine which it contains.

Urinary irritation may be caused by the junipers. The agonizing and deadly effects of overdosing with oil of savin are well known. Other species of coniferous plants share these properties in variable degree.

The same thing is true of various species of buttercup and other plants of the *Ranunculaceæ.* The distillate of *Ranunculus flammula* is powerfully emetic, and the roots of *R. thora* are very poisonous. Various cases of poisoning of domestic animals by these plants are recorded. Even applied to the external skin, they act severely as blistering agents. A species of *Clematis* is used by the Cubans to blister the face for toothache, and this and other species are similarly used for rheumatism. It is said that beggars have used the juice of *Ranunculus sceleratus* to make pitiful sores upon their bodies. The sores so caused are said to produce little pain, but are very obstinate in resisting a cure and have a great tendency to slough. Because of the painlessness and because there is no danger of poisoning by absorption, as in the case of cantharides, it has been proposed to substitute the fresh juice of these plants for the latter in scientific treatment. But the uncontrollable nature of the ulcer is considered a bar to such practice. Poisoning accidents from eating these plants may be regarded as improbable, owing to the painfully acrid effects upon the mouth.

The same acrid taste would tend to prevent poisoning by *Chelidonium*, or garden celandine, which is a violently acrid narcotic and drastic poison, the cerebral disorder being very great. It is very similar in composition and properties to *Sanguinaria.* Various fatal poisoning cases are recorded in the foreign journals. It is even powerfully irritant to the external skin.

Tanacetum vulgare, or tansy, grows very extensively along roadsides and in waste places. It grows in extensive patches, often in grassy places, but soon kills out the grass and all other plants and occupies the ground exclusively. It is easily recognized by its odor and by its bitter and disagreeable taste.

Absinthium is in a general way similar in composition and properties as a poison, though the symptoms are more largely cerebral. It is not likely to be taken except for medicinal purposes or as an addition to spirits. As a result of the latter, poisoning is usually chronic and extremely difficult to cure. The plant is very rare in this vicinity, occurring only in isolated small patches.

Dr. Rusby next considered the group of deadly narcotic herbs, consisting of tobacco, hemp, the two daturas, henbane, and belladonna.

Tobacco, *Nicotiana tabacum*, he dismissed with a mere mention, as its properties are so generally known. It is very scarce here, only occasional plants being seen.

The same may be said of hemp, *Cannabis sativa*, the flowering tops of the female plants of which yield an extract well known under the name of hasheesh. There is no likelihood of the plant being eaten in poisonous quantities.

Henbane (*Hyoscyamus niger*), belladonna (*Atropa belladonna*), and the Daturas (*D. stramonium* and *D. tatula*) have almost identical composition and properties. The first two are found in this section only occasionally, as isolated plants, but not so the daturas. Both are very common and very abundant in all waste places in and about the city. They are very easily recognized as rank-smelling, stout, tall, widely branching annuals, in general habit resembling pokeweed, but with large, inequilateral, very coarsely toothed or lobed leaves, campanulate, fragrant flowers, from four to six inches in length and half or more as broad, and large, subglobular, capsular fruits, from two to three inches in diameter, armed with soft fleshy spines, and containing numerous small, blackish, reniform, reticulate seeds. *D. tatula* is distinguished by its more decidedly purple stems, purplish flowers, usually smaller size, and nearly equal prickles of the capsules. The distinction is, however, not essential, as the properties are regarded as identical. The whole plant has a striking and, to the careless, an attractive aspect, and few plants in the world have so extensive a toxicological literature. Poisoning is more common by the seeds, although the herbage is not without its record in this direction.

Lobelia inflata, or Indian tobacco, is a plant exceedingly common in our vicinity and with an extensive record of fatal poisoning cases, all of which have occurred through its improper use as a medicine. This has always been a favorite remedy with the quack medical sects, such as the Coffinites. A writer in the *British Medical Journal* for 1882 says that deaths from *Lobelia inflata* administered by Coffinites are of frequent occurrence. Their dictum is that heat is life, and the want of heat disease and death. In accordance with this principle, their drugs are lobelia and cayenne. It is asserted by them that lobelia can not kill, but it has been shown over and over again that, when not rejected, it acts as a powerful toxic agent and kills with the greatest certainty. Identification is easy. It grows in partly grassy open places, especially those which are gravelly or partly sandy. It is about a foot high, branched, often much so, with little blue flowers solitary and sessile in the axils, the corolla split down the front, and especially by its inflated capsules.

Concerning poisonous flowers, says the author, there is very little to be said. Poisoning accidents by them are rare indeed, yet it is proper to record a few which have been found to be poisonous, and must hence be regarded as more or less dangerous.

The flowers of lily-of-the-valley share in a lesser degree the properties of the remainder of the plant, and because of their fragrance, attractive appearance, and sweetish taste are especially dangerous to children.

The flowers of the locust are regarded with suspicion, and it is said that the occasional poisonous properties of honey are due to its origin in these flowers, though there are good theoretical reasons for doubting this.

The same statement applies to nectar obtained from flowers of the two species of laurel and of *Pieris Mariana*, or stagger-bush.

Coming now to the consideration of poisonous fruits, he says, the liability to accidents from eating them is far greater than in the case of any other part of the plant.

Of the *Solanum dulcamara*, or bitter-sweet, Lindley says: "Its gay, tempting berries have occasionally caused serious accidents among children and others who have eaten them." Care is to be taken to distinguish this, the true bitter-sweet, from that so called in New England and elsewhere, *Celastrus scandens*, or false climbing bitter-sweet. The latter has fruits which burst open in the fall and are used for decoration. The fruits of the former are oblong, soft, translucent, and fleshy. The plant does not truly twine, but reclines on bushes along streams and in damp places, and is very common hereabouts.

A very similar-appearing fruit is that of *Taxus minor*, britton, or creeping yew. It is not common close by the city, but has been found in northern New Jersey and it is common in the Catskills. The fruit is of similar form and color to that of the bitter-sweet, but it is solitary, erect, shorter, and broader; it has a circular opening at the apex and a solitary large seed. Lindley says the berries are not harmful, except the seeds, which, like the leaves, produce symptoms like digitalis poisoning.

A somewhat similar fruit is that of *Actæa rubra*, red baneberry or red cohosh. The white berries probably have the same properties. Dr. Rusby states that he has found no record of the properties of the American form, but, according to Lindley, the European form produces death with violent delirium and emetico-catharsis. There is not the slightest reason to doubt that the American form would act similarly.

Conium resembles in a general way anise, fennel, caraway, coriander, and other edible *Umbelliferæ*. The seedlike fruits also very closely resemble those of anise, and in a lesser degree those of the others named, for which they might easily be mistaken by the ignorant, inexperienced, or careless.

The properties of a few more seeds, says the author, remain to be considered, first those of the castor-oil plant, which is common in gardens and occasional in waste places. Although castor oil is expressed from these seeds, and although that oil may be taken in large quantities without danger, this is not true of the seeds themselves. There remains in the pulp, after the expression of the oil, a small quantity of an exceedingly poisonous substance, ricinin, so that a few seeds eaten entire might cause serious symptoms in a young child.

The same may be said of a number of other seeds of the *Euphorbiaceæ*. *Euphorbia lathyrus* is occasionally found wild in this section, and two fatal cases of poisoning by its seeds are recorded. The seeds of other species have been known to produce the same result.

Suspicion must be attached to the seed of the common horse-chestnut, notwithstanding that no serious cases of poisoning have been attributed to it, because of its relationship. Of the seeds of one, the red buckeye (*Æsculus pavia*), Johnson says the active principle has been shown to be a glucoside possessed of poisonous properties. It is narcotic and about a third as strong as opium. In the Southern States the seeds are crushed and thrown into the water to stupefy fish, just as the bark and roots of its relatives are used in the tropics. Fatal cases of poisoning of children by these seeds are reported from Texas.

A very poisonous substance is the oil obtained from the seeds of *Chenopodium anthelminthicum*, or American wormseed. All the recorded cases of poisoning by it have occurred in the improper medicinal use of the oil, and indeed the nauseous odor and taste of the seeds would seem to almost preclude the possibility of its being taken in any other case.

Dr. Rusby also spoke of poisoning by datura seeds, that by henbane seeds being similar.

It should not be overlooked that both black and white mustard, especially the former, may produce poisonous effects in large overdoses, the nature of the poisoning being irritant and similar to that by horseradish and watercress as previously described, with, however, more disturbance of the stomach.

Poisoning Due to Applications of Bismuth Subnitrate.—The *Gazette médicale de Paris* for December 7th publishes a report of a recent meeting of the *Société des hôpitaux* at which M. Gaucher and M. Balli gave an account of several cases in which they had observed poisoning as a result of the application of bismuth-subnitrate dressings. The poisoning had been manifested by the following symptoms: 1. Stomatitis and a streak on the gums analogous to that of lead poisoning. 2. Slate-colored patches resembling tattooing on the inner surface of the cheeks, on the tongue, and on the gums. To this pigmentation of the buccal cavity might be added symptoms more or less acute of stomatitis with swelling of the buccal mucous membrane.

In the first case presented by M. Gaucher a dressing of the bismuth had been applied to a varicose ulcer, and at the end of a month symptoms of stomatitis had appeared. The treatment had been suspended, and eight days afterward the acute symptoms had disappeared, but the streak had persisted for seven months. In the second case the symptoms had been more serious; the stomatitis and the same streak had appeared on the fifth day and developed rapidly into ulceration; there had also been blackish, almost sphacelous, patches The treatment had been stopped, but the ulceration had persisted for two months. At the end of that time the patient's condition had become somewhat ameliorated, but vomiting and a rebellious diarrhœa had set in, which had brought about a cachectic condition and finally led to death. No autopsy had been made, so that it was difficult, said M. Gaucher, to decide whether the troubles could be attributed to the bismuth or to the prolonged suppuration of the burns for which the bismuth subnitrate had been employed.

Two other patients had shown only slight symptoms of poisoning. Other observations, said M. Gaucher, had shown the importance of digestive troubles, especially of stomatitis, in bismuth poisoning. Besides this, Rocher had observed a case where there had been only nephritis with traces of the bismuth in the urine.

How, asked the author, could the external application of bismuth subnitrate provoke such symptoms when, taken internally, even in large doses, it did not give rise to any symptoms of poisoning? Lewald's, Gerbal's, and Lazowski's experiments had shown that bismuth, taken internally, was partly absorbed, although the quantity absorbed was very small. Lassana thought that a small quantity of bismuth subnitrate might be dissolved by the acids in the stomach, but absorption was feeble; in the intestine, however, where the reaction was alkaline, the dissolved bismuth was to be found again precipitated. Dalchi and Villejean thought that the absence of poisoning was due to the fact that the acid liquids in the stomach dissolved very little of the bismuth, and that the alkaline properties of the intestinal juices rendered absorption impossible.

M. Hayem stated that he had often given doses of from one hundred and fifty to three hundred grains of bismuth subnitrate, according to Kussmaul's and Heiner's method, and he had never observed any symptoms of poisoning. He had examined the stomach of a woman who had had repeated attacks of ulceration, for which she had been subjected to the bismuth treatment for a long time. The entire surface of the stomach had been covered with the bismuth, although the treatment had been stopped for several weeks before her death. She had never shown any symptoms of poisoning. M. Hayem thought it would be useful to analyze the bismuth after its prolonged application in order to study its changes.

Liquor Amnii escaping from an Unoccupied Subdivision of the Fœtal Membranes.—In the *Boston Medical and Surgical Journal* for December 19th Dr. Charles H. Morrow, of Gloucester, Mass., writes that he was called on August 14, 1894, to attend a patient who had all the usual symptoms of an approaching abortion; the os was not dilated at any examination, and no product of conception was known to have escaped, or did any afterward escape to the author's knowledge. The woman believed that she was pregnant about four months, this being her second pregnancy. As the symptoms subsided without a perceptible diminution in the size of the uterus, it was thought that the treatment had prevented an abortion.

About November 1st she informed Dr. Morrow that an escaping fluid compelled her to wear pads which only partially absorbed it, her clothing and lower extremities being generally somewhat moist; it was clear that the escaping fluid was the liquor amnii, and he informed her that in spite of the complication she might still bring forth a living child. She could take but little exercise and became anæmic and debilitated.

She was taken in labor on November 28th, about six weeks from the time she had first noticed the escaping fluid, and was delivered of a living female child of average weight, but presumably more than four weeks premature; the quantity of liquor amnii which escaped was excessive.

The secundines indicated a twin pregnancy; a partition wall, which was intact, caused the membranes to form two sacs, the larger of which had contained the fœtus just delivered; the smaller sac had a capacity of more than a pint and when delivered had a tear two inches in length, which allowed the escape of its contents; there was no evidence that a fœtus had escaped from this smaller sac during labor; remembering, said the author, the symptoms of an abortion when first called, he was about to search for evidence of fœtal attachment, when, observing that his patient was losing some blood, and that the uterus was not thoroughly contracted, his attention was employed in the attempt to overcome this obstinately persisting condition. When all danger had passed, he found that the nurse had removed and destroyed the interesting secundines.

Suction of the Nipples in the Treatment of Fibrous Tumors of the Uterus.—In the *Centralblatt für Gynäkologie* for December 7th there is an abstract of an article by Dr. F. Howitz, of Copenhagen, published in the *Ugeskrift for Lager*, in which it is related that the author happened to have at the same time under his care two women, both of whom were pregnant, and both of whom had large fibro-myomata of the uterus. One of these women nursed her child, and an examination at the end of five months after its birth showed that her tumor had entirely disappeared. The other woman did not nurse her child, and her tumor remained unchanged. These cases led the author to seek if by means of suction on the nipples a favorable influence could be exerted upon fibrous tumors of the uterus. He has tried it in only five cases, the suction being carried out daily. In some of the cases there seemed to be a diminution of the size of the tumor, and in no case has any harm been noticed as the result of the procedure.

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FRANK P. FOSTER, M.D.

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